

# Service Manual

Radio

FM-LW-MW-SW ALL BAND RECEIVER

**RF-B65DA**

- Please file and use this Service Manual together with the service manual for Model No. RF-B65D Order No. AD8902015C8.
- This Service Manual indicates the main differences between; Original RF-B65D (EG) and RF-B65DA (EG).

Color

(K) ..... Black Type

Area

Country Code	Area	Color
(EG)	F.R. Germany	(K)

**CHANGES****■ SPECIFICATIONS**

Frequency Range: SW; 1.615~26.1 kHz



Frequency Range: SW; 1.615~29.999 kHz

RF-B65D (EG) (Original)

**RF-B65DA (EG)****■ REPLACEMENT PARTS LIST**

Ref. No.	Description	Part Number		Remarks
		RF-B65D (EG) (Original)	RF-B65DA (EG)	
<b>DIODES</b>				
D17	DIODE	MA4051LRA	MA4047HRA	
<b>COILS</b>				
L27	ANT. COIL	RLF6019-0	RLF6D19-0	
<b>TRANSFORMER</b>				
T4	TRANSFORMER	RLI3A4-M	RLI3A001-M	
T5	TRANSFORMER	RLI3A4-M	RLI3A001-M	
<b>RESISTOR</b>				
R48	RESISTOR (1/10 W, 470)	RRJ6GCJ101TE	RRJ6GCJ471TE	
R87	RESISTOR (1/10 W, 220)	RRJ6GCJ471TE	RRJ6GCJ221TE	
R259	RESISTOR (1/10 W, 22 K)	—	RRJ6GCJ223TE	Added
R292	DESISTOR (1/10 W, 22 K)	RRJ6GCJ223TE	—	Deleted
<b>CABINET AND CHASSIS</b>				
3	REAR CABINET ASS'Y	RYFFB65DEG	RYFFB65DAEG	
4	STAND	RKL30ZA	RKL30ZA-0	
17	SCREW	XSHR17+2FZ	XSHR17+3	
19	TERMINAL	RJC3F0010ZC	RJC30010ZC	
41	SOCKET	RJSS4L4ZA-X	RJS4L4ZA-X	
83	FRONT CABINET ASS'Y	RYMFB65DEG	RYMFB65DAEG	
<b>ACCESSORIES</b>				
A4	INSTRUCTION MANUAL	RQT0046B	RQT0535-E	
A5	MEMORY CHANNEL SHEET	RQX9436YA	RQX9412ZA	
A6	SHORT WAVE GUIDE	RQX9454ZA	—	Deleted
<b>PACKING MATERIAL</b>				
P3	SLEEVE	RPK0032	RPK0163	

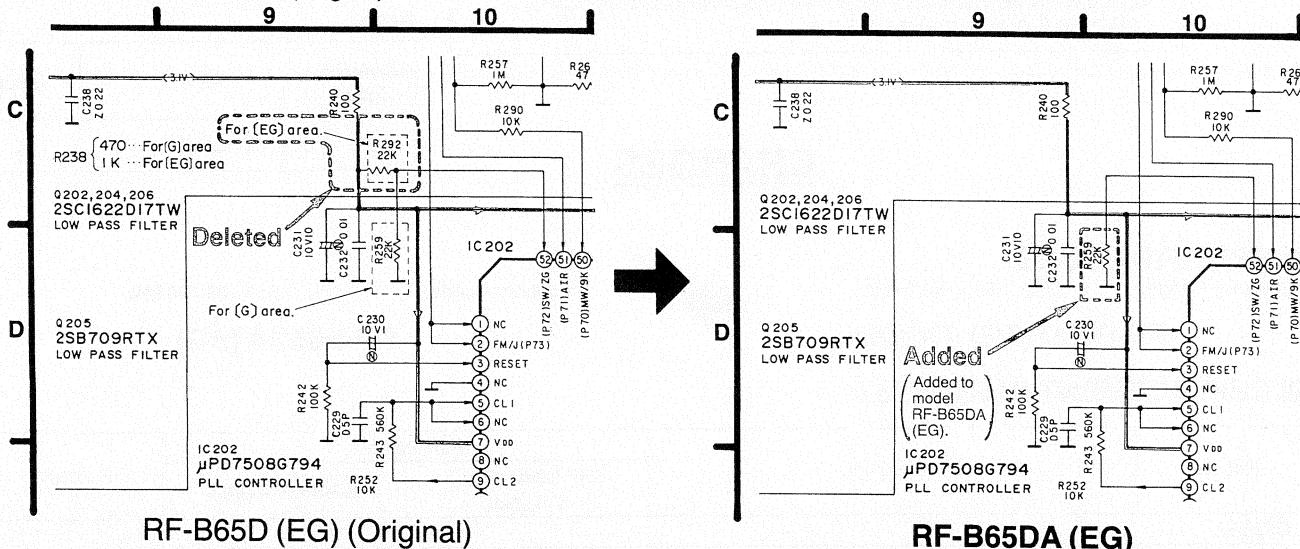
**Panasonic**

- In the service manual for model RF-B65D, the part numbers of the resistor and capacitor below are wrong. They should be corrected as shown. The Schematic Diagram and Circuit Board and Wiring Connection Diagram are correct.

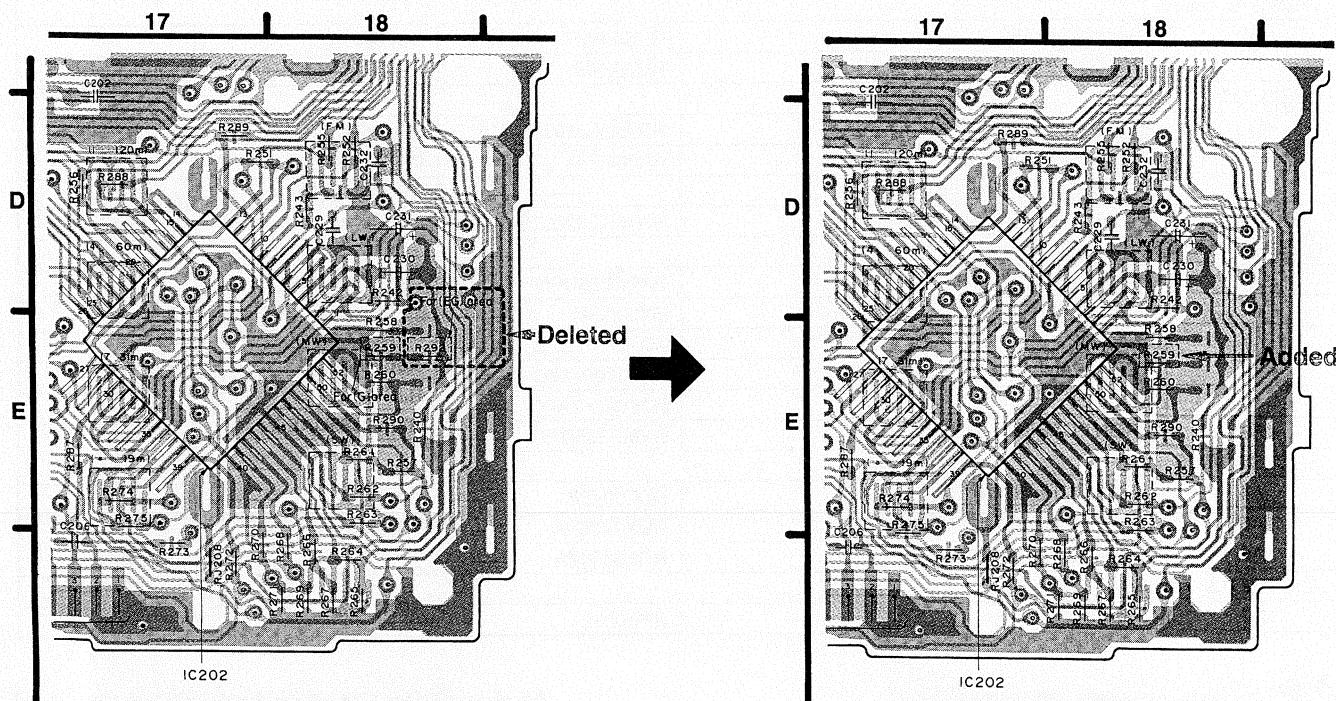
Ref. No.	Description	Part Number		Remarks
		RF-B65D (EG) (Original)	RF-B65DA (EG)	
<b>RESISTOR</b>				
R148	RESISTOR (1/10 W, 220)	—	RRJ6GCJ221TE	
<b>CAPACITOR</b>				
C208	CAPACITOR (50 V, 1)	ECEA1CKS100	ECEA1HKS010	

## SCHEMATIC DIAGRAM

•for LCD circuit section (Page 7)



## CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (Page 14)



RF-B65D (EG) (Original)

RF-B65DA (EG)

# MEASUREMENTS AND ADJUSTMENTS (Page 17)

## ■ CLOCK ALIGNMENT

BAND	FREQUENCY DISPLAY SETTING	FREQUENCY COUNTER	ADJUSTMENT (Refer to Fig. 5)	REMARKS		
				Adjust the frequencies according to room temperature.		
(16)	SW 29,999 MHz... (G) 26,100 MHz... (EG) ↑ Changed	TP5 ... (+) TP6 ... (-)	CT201	Room Temperature	Area	Frequency
				8°C ≤ t < 22°C	(EG)	81.945000 MHz ± 300 Hz
					(G)	85.844000 MHz ± 300 Hz
				22°C ≤ t < 26°C	(EG)	81.944800 MHz ± 300 Hz
					(G)	85.843800 MHz ± 300 Hz
				26°C ≤ t < 30°C	(EG)	81.944500 MHz ± 300 Hz
					(G)	85.843500 MHz ± 300 Hz
				30°C ≤ t < 33°C	(EG)	81.944100 MHz ± 300 Hz
					(G)	85.843100 MHz ± 300 Hz

RF-B65D (EG) (Original)



## ■ CLOCK ALIGNMENT

BAND	FREQUENCY DISPLAY SETTING	FREQUENCY COUNTER	ADJUSTMENT (Refer to Fig. 5)	REMARKS		
				Adjust the frequencies according to room temperature.		
(16)	SW 29,999 MHz	TP5 ... (+) TP6 ... (-)	CT201	Room Temperature	Frequency	
				8°C ≤ t < 22°C	85.844000 MHz ± 300 Hz	
				22°C ≤ t < 26°C	85.843800 MHz ± 300 Hz	
				26°C ≤ t < 30°C	85.843500 MHz ± 300 Hz	
				30°C ≤ t < 33°C	85.843100 MHz ± 300 Hz	

RF-B65DA (EG)

# Service Manual

10494 91000241 02  
FB65D MNL 1 ST

*GR*

Radio

FM-LW-MW-SW ALL BAND RECEIVER

**RF-B65D****Color**

(K) ..... Black Type

**Area**

Country Code	Area	Color
(EG)	F.R. Germany	
(G)	Asia, Latin America, Middle Near East, Africa and Oseania.	(K)

**■ SPCIFICATIONS**

Frequency Range:

FM; 87.5~108 MHz  
 LW; 153~519 kHz  
 MW; 522~1611 kHz (at 9 kHz step)  
 520~1610 kHz (at 10 kHz step)  
 SW; 1,615~29,999 kHz ..... For (G) area  
 1,615~26.1 kHz ..... For (EG) area

Intermediate Frequency:

FM; 10.7 MHz  
 AM 1st; 55,843 MHz  
 AM 2nd; 450 kHz ..... For (G) area  
 459 kHz ..... For (EG) area

Sensitivity:

FM; 4  $\mu$ V/50 mW output (-3 dB Limit Sens.)  
 LW; 500 mV/m/50 mW output  
 MW; 300  $\mu$ V/50 mW output  
 SW; 16  $\mu$ V/50 mW output

Power Source:

Battery; 6 V (four UM-3 batteries for radio)  
 3 V (two UM-3 batteries for memory back-up)  
 AC; with included AC adaptor  
 110~127/220~240 V, 50/60 Hz ..... For (G) area  
 220 V, 50 Hz ..... For (EG) area

Power Consumption:

5 W (with included AC adaptor)

Speaker:

8 cm PM dynamic speaker, 8 $\Omega$ 

Power Output:

550 mW (RMS Max.)

Jacks:

Earphone; 8 $\Omega$ ,  $\varnothing$ 3.5EXT. ANT. (LW/MW/SW);  $\varnothing$ 3.5

DC IN; 6 V

Dimensions:

204.5 (W)  $\times$  119 (H)  $\times$  36.5 (D) mm

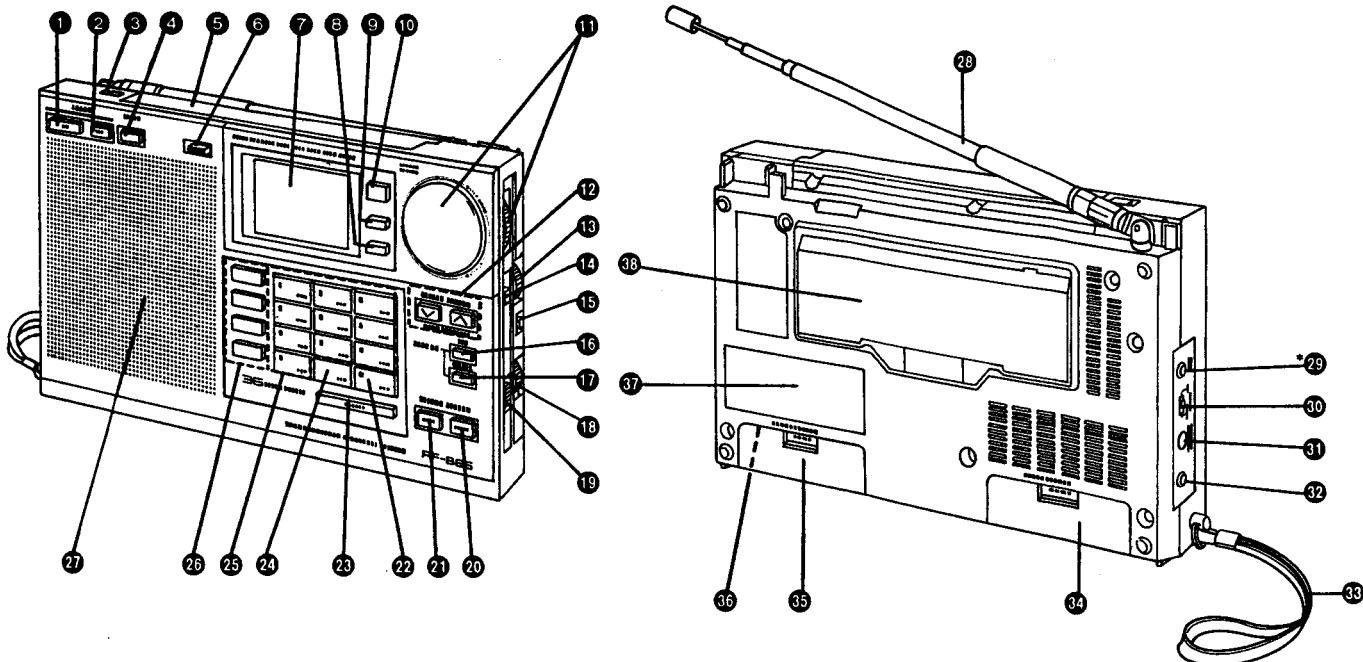
Weight:

625 g without batteries

Design and specifications are subject to change without notice.

**National/Panasonic**
**Matsushita Electric Industrial Co., Ltd.**  
 Central P.O. Box 288, Osaka 530-91, Japan

## LOCATION OF CONTROLS AND COMPONENTS



- ① Power On Key (ON)...(G)**  
Operation On Key (ON)...(EG)
- ② Power Off Key (OFF)...(G)**  
Operation Off Key (Off)...(EG)
- ③ Station Reminder Open Switch**  
Use the switch to open the Station Reminder cover.
- ④ Sleep Key (SLEEP)**  
Press the key to turn the radio off automatically in 60 minutes.
- ⑤ Station Reminder  
(STATION REMINDER)**  
Attach the included Memory Channel Sheets to the Station Reminder. It is useful for Memory Tuning.
- ⑥ AM Mode Selector (AM MODE)**  
When receiving the SSB (Single Side-Band), set to "SSB". For others, set to "NORMAL".
- ⑦ LCD Multi-Information Display**
- ⑧ Time Set Key (TIME SET)**  
Press the key when setting a clock time.
- ⑨ Dual Time Set Key (DUAL TIME)**  
This unit enables the dual clock time besides the normal clock time to be set. Press the key when setting the dual clock time, or selecting the display of the normal or dual clock time.
- ⑩ Display Select Key (CLOCK/FREQ)**  
Press the key to select the frequency display or the clock display.
- ⑪ Rotary Tuning Control  
(ROTARY TUNING)**
- ⑫ Up and Down Keys (v • ^)**  
Press the Up Key (^) or Down Key (v) to make the frequency change up or down during Manual Tuning and Auto Scan Tuning. Or press to stop Auto Scan Tuning.
- ⑬ Fine Tuning Control (FINE TUNE)**  
When receiving the SSB, use this control for more precise tuning.
- ⑭ Rotary Tuning Step Selector**  
For Rotary Tuning, set the selector to "FAST" or "SLOW" to make the frequency change at your desired tuning steps. In "LOCK" position, Rotary Tuning cannot operate. So, the frequency being received will be locked, and cannot be drifted accidentally.
- ⑮ Tone Selector (TONE)**
- ⑯ Standby Time Set Key (SET)**  
Press the key to set the time you want to turn the radio on automatically.
- ⑰ Standby Time Cancel Key  
(CANCEL)**  
Press the key to cancel the standby time.
- ⑱ Volume Control (VOLUME)**
- ⑲ Hold Switch**  
Usually set the switch to the opposite direction of the arrow.  
When it is set to the direction of the arrow, the operation of all the keys and the Rotary Tuning Control will be locked.  
It is effective during both the radio-on and off.
- ⑳ Meter Band Direct Access Key  
(METER)**  
Press the key before calling the lowest frequency of the SW meter band including your desired station.
- ㉑ Frequency Direct Access Key  
(FREQ)**  
When you know the frequency of your desired station, press the key before entering the frequency number.
- ㉒ Memory/Meter Band Key**  
Use the key first when you preset the desired stations into each of the memory channels. This key also functions as the Meter Band Key, which can call the lowest frequency of a SW meter band.
- ㉓ Enter Key (ENTER)**  
After entering the frequency number of your desired station or the number of a clock time, press the key to begin receiving the broadcast of the station or to complete the time setting.
- ㉔ Decimal Point/Meter Band Key**  
For Frequency Direct Access Tuning, use the key to enter the decimal point of the frequency.  
This key also functions as the Meter Band Key.

**25 Number/Memory Channel/Meter Band Keys**

Press the keys in the following ways.

- In Frequency Direct Access Tuning, to enter the frequency number of your desired stations.
- In Memory Tuning, to preset and call the stations.
- In Meter Band Direct Access Tuning, to call the lowest frequency of a SW meter band.

**26 Band Select Keys**

**27 Speaker (8 cm, 8Ω)**

**28 External Antenna Jack (EXT ANT)**

\*28 is not equipped with the model for F.R. Germany.

**29 Sensitivity Selector (SENS)**

Normally set to "DX". When the reception is impaired or interfered by powerful station, set to "LOCAL".

The selector cannot operate for FM reception.

**30 DC Input Jack (DC IN 6 V ⊕⊖⊕)**

**31 Earphone Jack (φ)**

Connect the included earphone to the jack.

- Adjust the volume to lower level so as not to injure your ear.

**32 Carrying Strap**

**33 Radio Battery Compartment (RADIO BATTERY)**

**34 Memory Back-up Battery Compartment (BACK-UP BATTERY)**

**35 MW Frequency Step Selector (In the Memory Back-up Battery Compartment)**

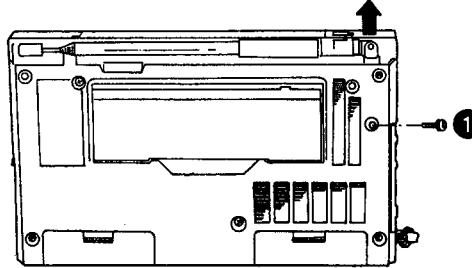
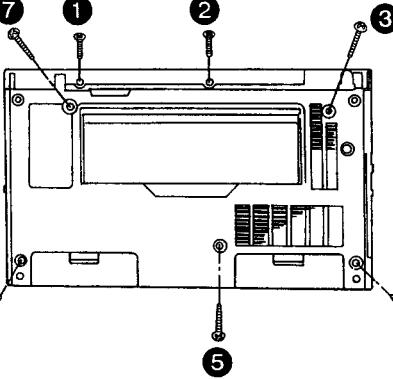
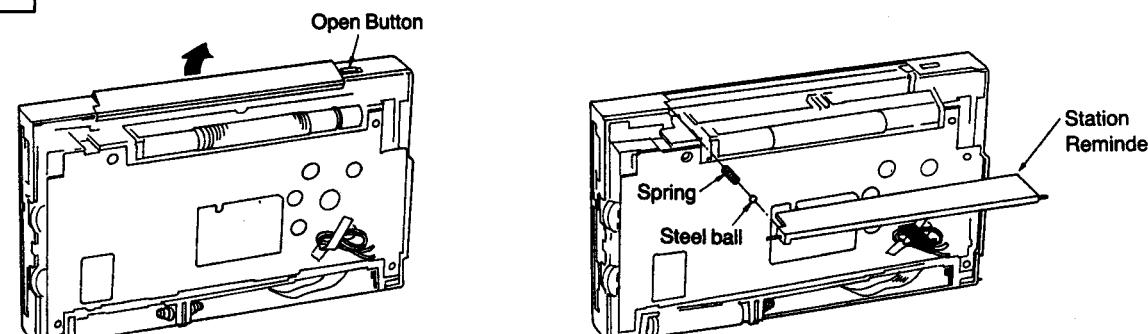
Before use, check that the selector is set to the frequency step corresponding to your area.

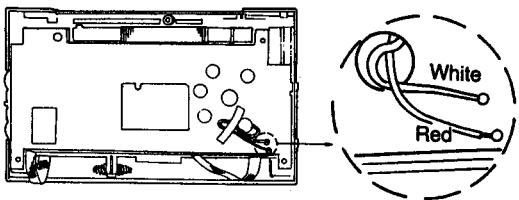
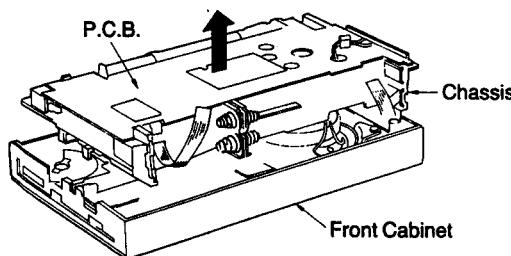
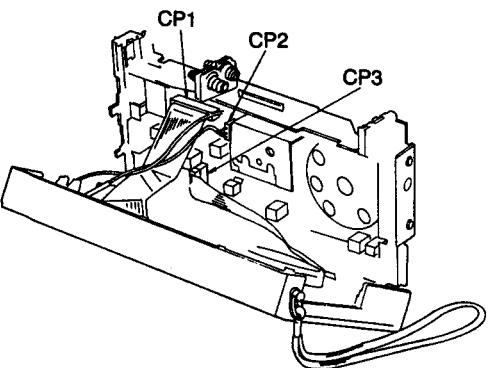
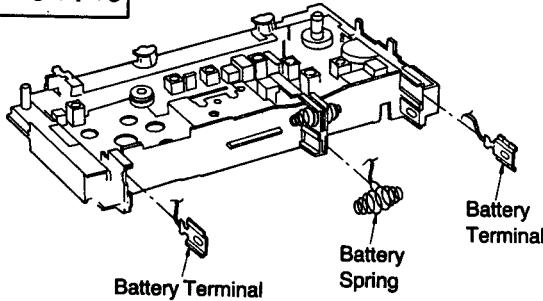
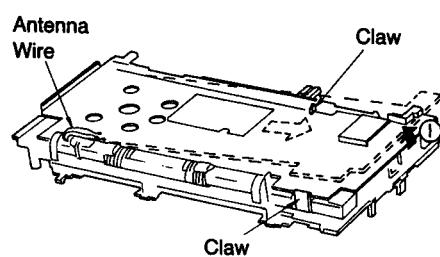
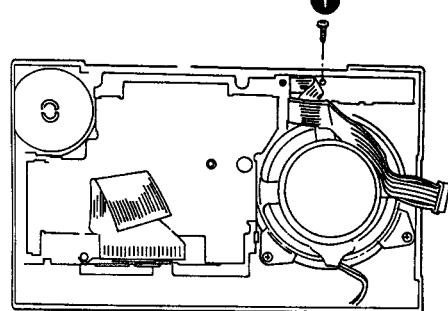
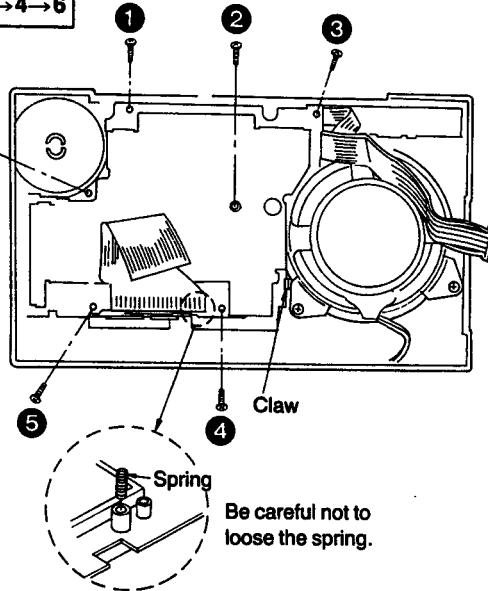
If not so, set the selector to the correct position.

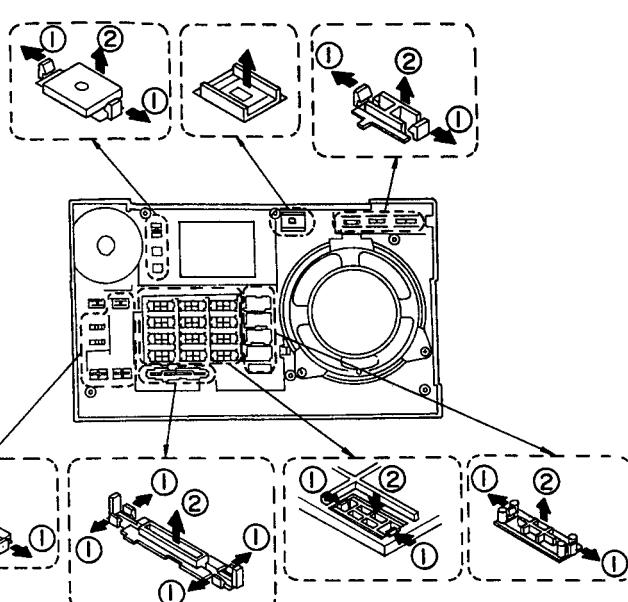
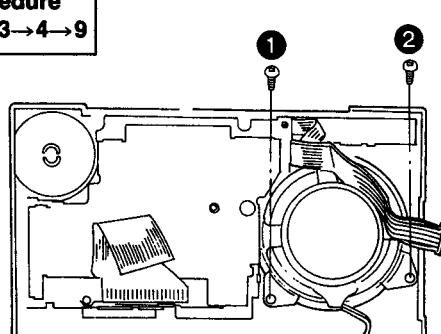
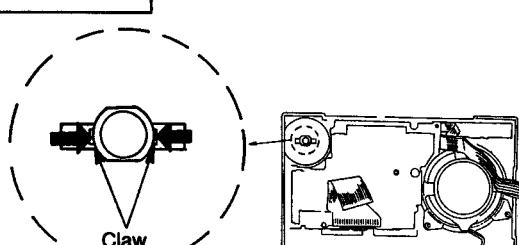
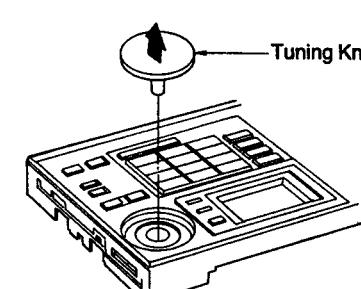
**36 World Time Table**

**37 Stand/Short Wave Frequency Allocation**

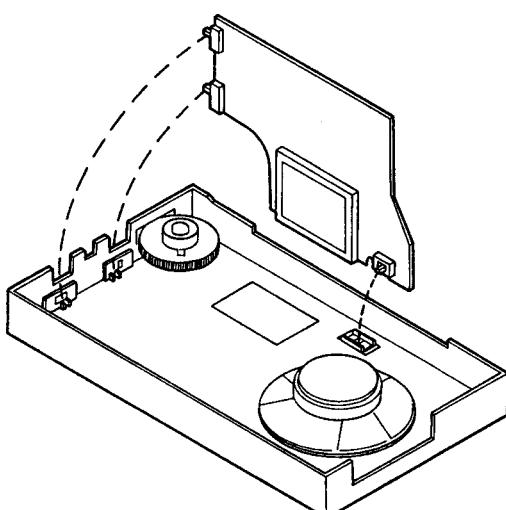
## DISASSEMBLY INSTRUCTIONS

Ref. No. 1	Removal of the Telescopic Antenna	Ref. No. 2	Removal of the Rear Cabinet
Procedure 1	 <p>1. Remove the screw ①. 2. Remove the Telescopic Antenna in the direction of the arrow.</p>	Procedure 1→2	 <p>1. Remove the 2 screws ①, ②. 2. Remove the 5 screws ③~⑦.</p>
Ref. No. 3	Removal of the Station Reminder	Procedure 1→2→3	 <p>1. Open the Station Reminder. 2. Remove the Station Reminder. Be careful not to lose the steel ball and the spring.</p>

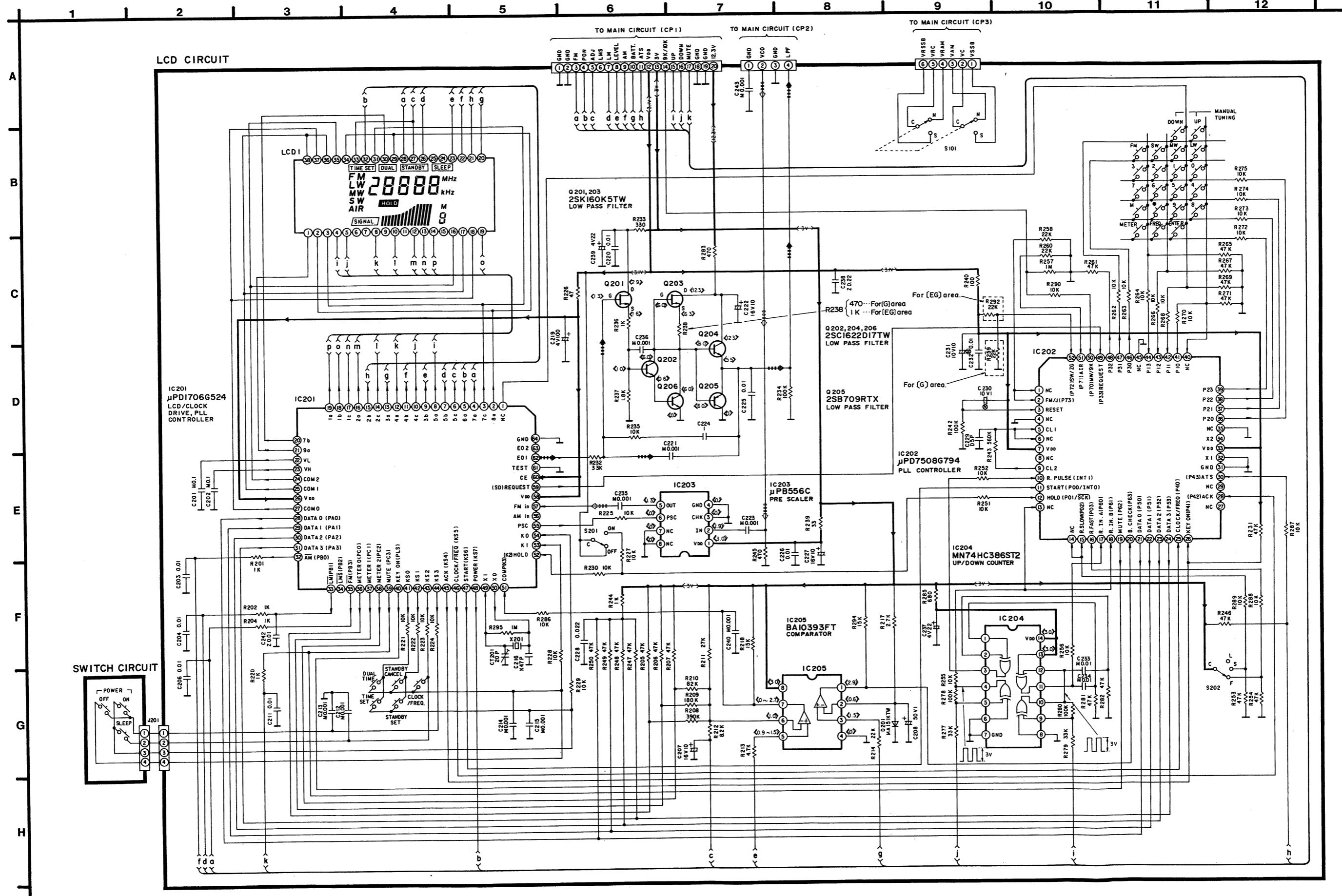
Ref. No. 4	Removal of the Chassis	Ref. No. 5	Removal of the Main P.C.B.
<b>Procedure 1→2→3→4</b>	 <p>1. Remove the solder from speaker terminal.</p>  <p>2. Remove the chassis and P.C.B.</p>  <p>3. Remove the connector (CP1, CP2, CP3).</p>	<b>Procedure 1→2→3→4→5</b>	 <p>1. Remove the 2 battery terminals and battery spring.</p>  <p>2. Remove the 2 claws and then remove the Main P.C.B. in the direction of the arrow.</p>
<b>Ref. No. 7</b>	<b>Removal of the Power Switch P.C.B.</b>	<b>Ref. No. 6</b>	<b>Removal of the L.C.D. P.C.B.</b>
<b>Procedure 1→2→3→4→7</b>	 <p>• Remove the screw (1).</p>	<b>Procedure 1→2→3→4→6</b>	 <p>1. Remove the 6 screws (1~6). 2. Remove the claw.</p>

Ref. No. 8	<b>Removal of the Buttons and Knobs</b>
<b>Procedure</b> 1→2→3→4→6 →8	 <p>1. Remove the claws in the direction of the arrow ①. 2. Remove the button or knob in the direction of the arrow ②.</p>
<b>Ref. No. 9</b> <b>Removal of the Speaker</b>	
<b>Procedure</b> 1→2→3→4→9	 <p>• Remove the 2 screws (1, 2).</p>
<b>Ref. No. 10</b>	<b>Removal of the Tuning Knob</b>
<b>Procedure</b> 1→2→3→4→10	 <p>1. Remove the 2 claws in the direction of the arrow.</p>  <p>Tuning Knob</p> <p>2. Remove the Tuning Knob in the direction of the arrow.</p>

### ■ L.C.D. P.C.B. Assembly



## SCHEMATIC DIAGRAM (for LCD Circuit Section and Switch Circuit Section)

Notes:  
1. S101

2. S201

3. S202

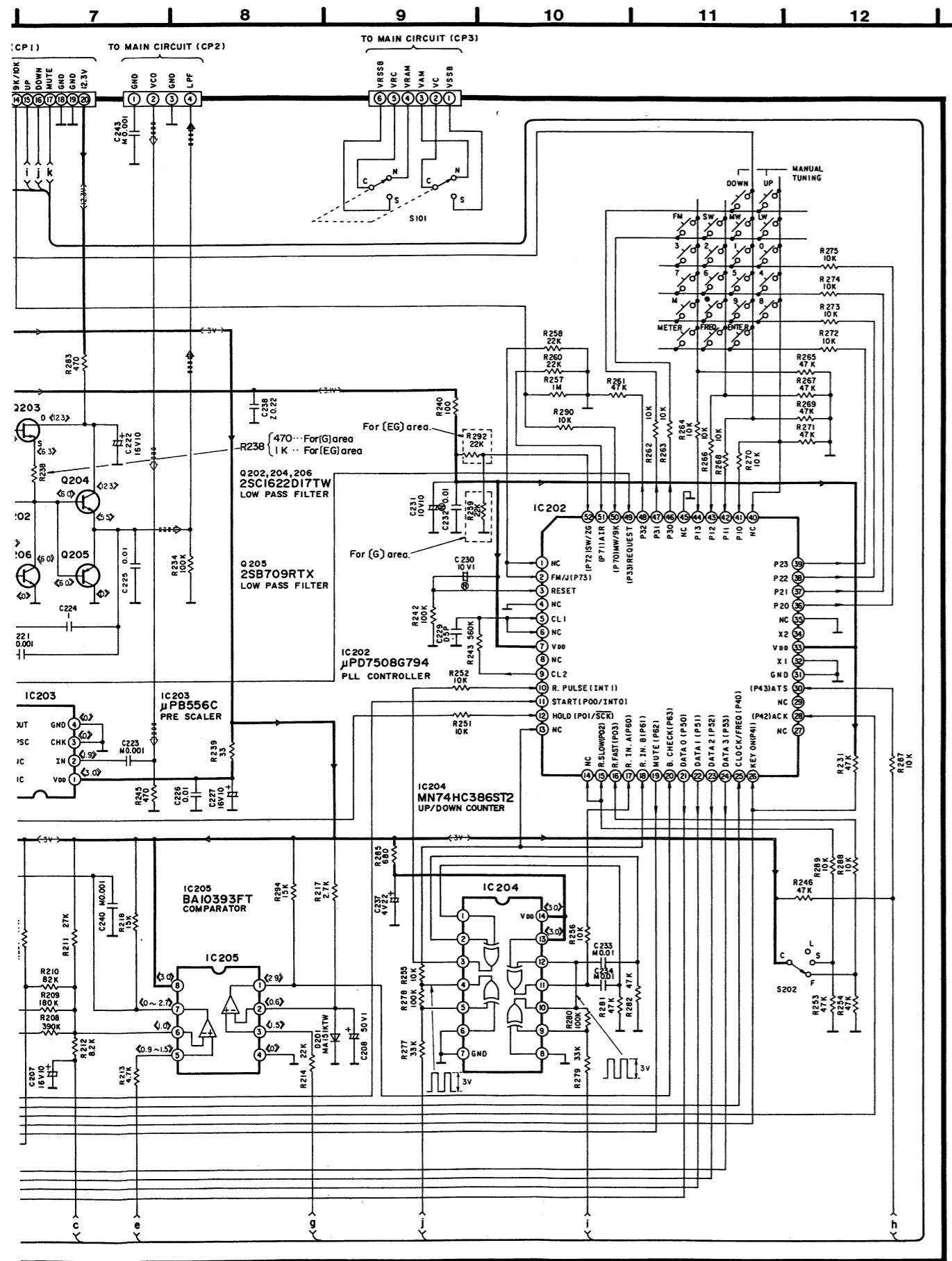
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1) The l

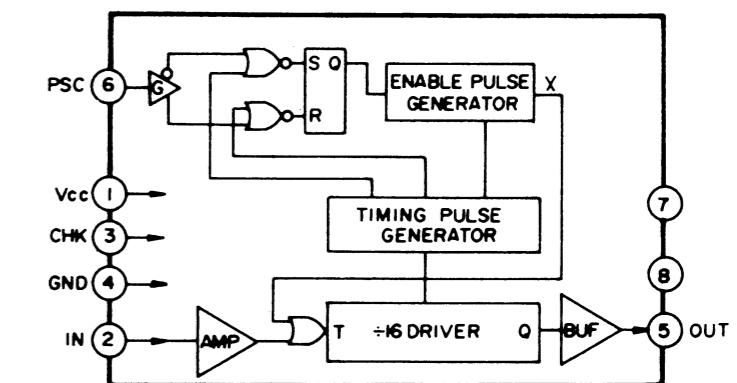
ection)



## Notes:

1. S101: AM mode select switch in "NORMAL" position.  
(N...NORMAL, S...SSB)
  2. S201: Hold switch.
  3. S202: Rotary tuning step select switch in "FAST" position.  
(L...LOCK, S...SLOW, F...FAST)
  4. DC voltage measurement are taken with electronics voltmeter  
from negative terminal of battery.  
<< >> ...SW position
- The supply parts number is described alone in the replacement parts list.
- This schematic diagram may be modified at any time with the development of new technology.

IC203 RVIUPB556C



## LIQUID CRYSTAL DISPLAY (LCD)

- 1) The LCD and IC201 are connected in the following way:

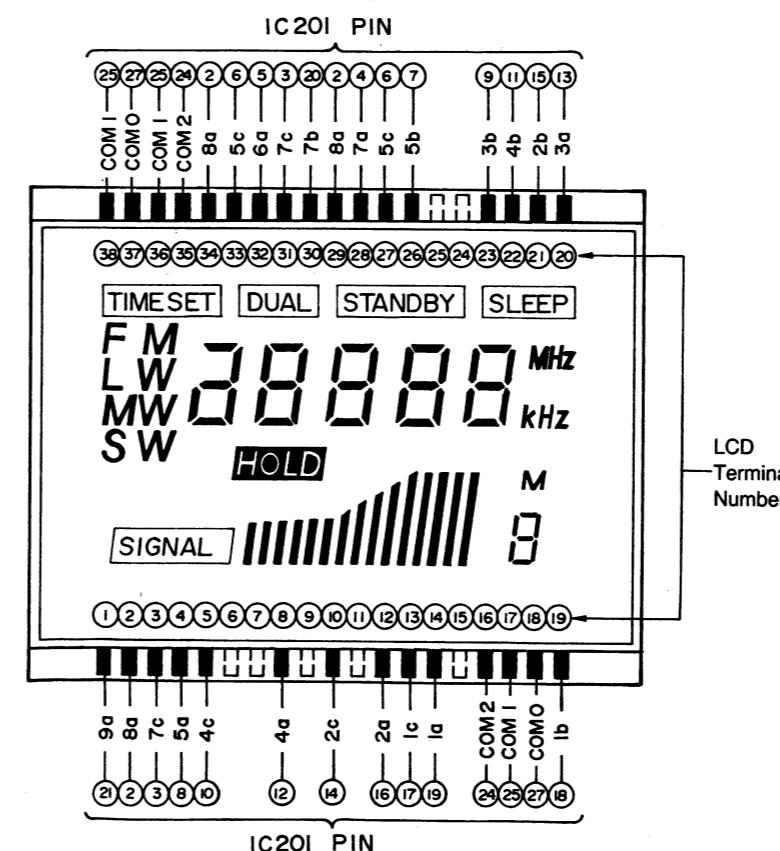


Fig. 1

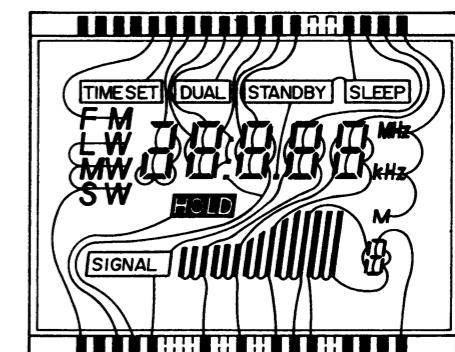


Fig. 2 (Segment)

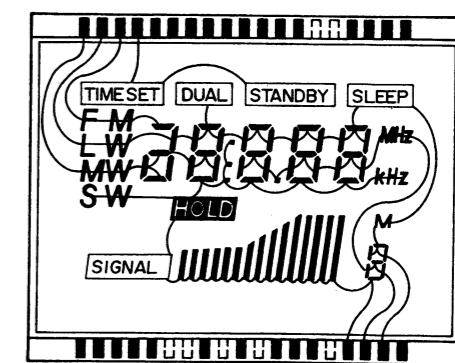
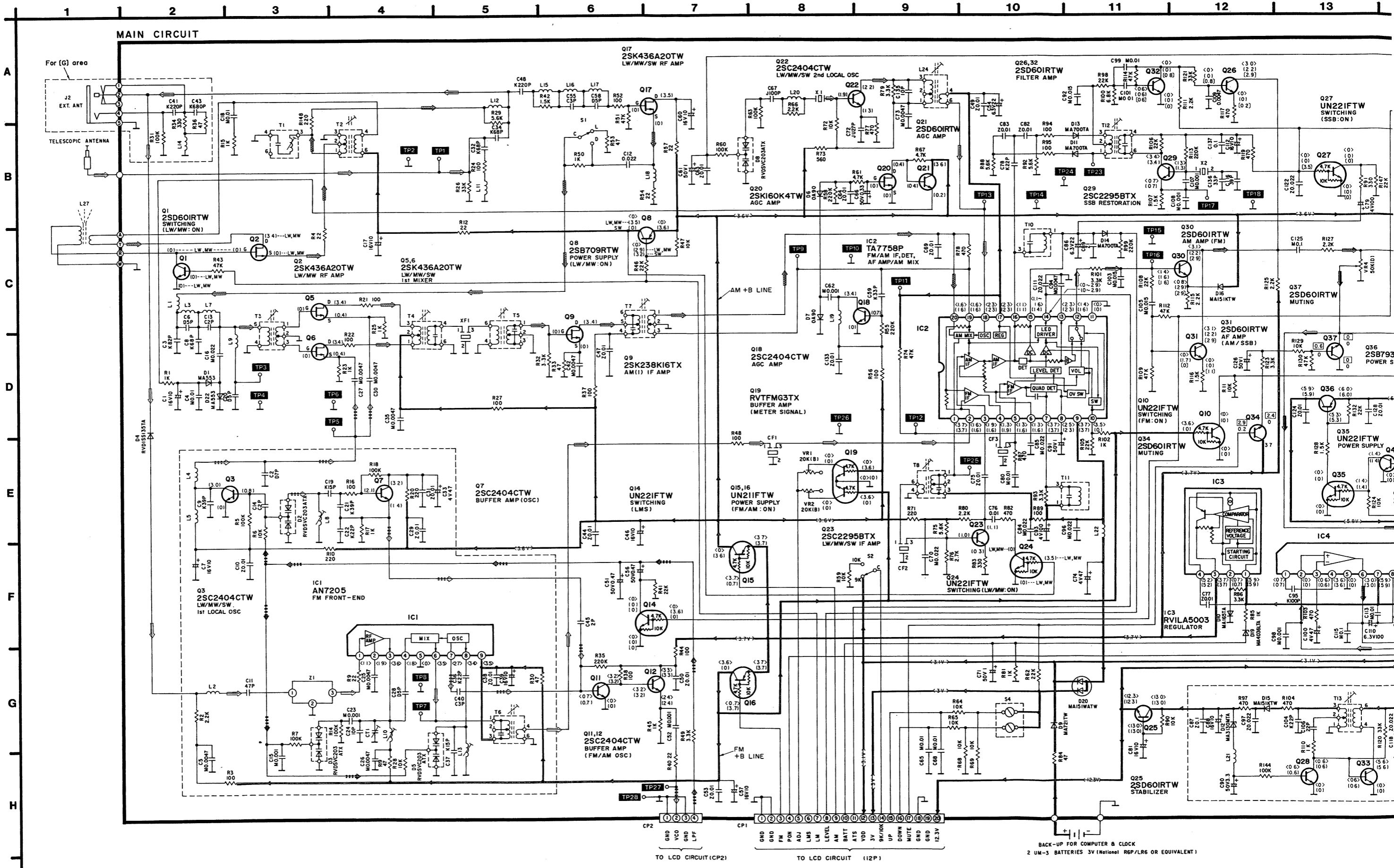
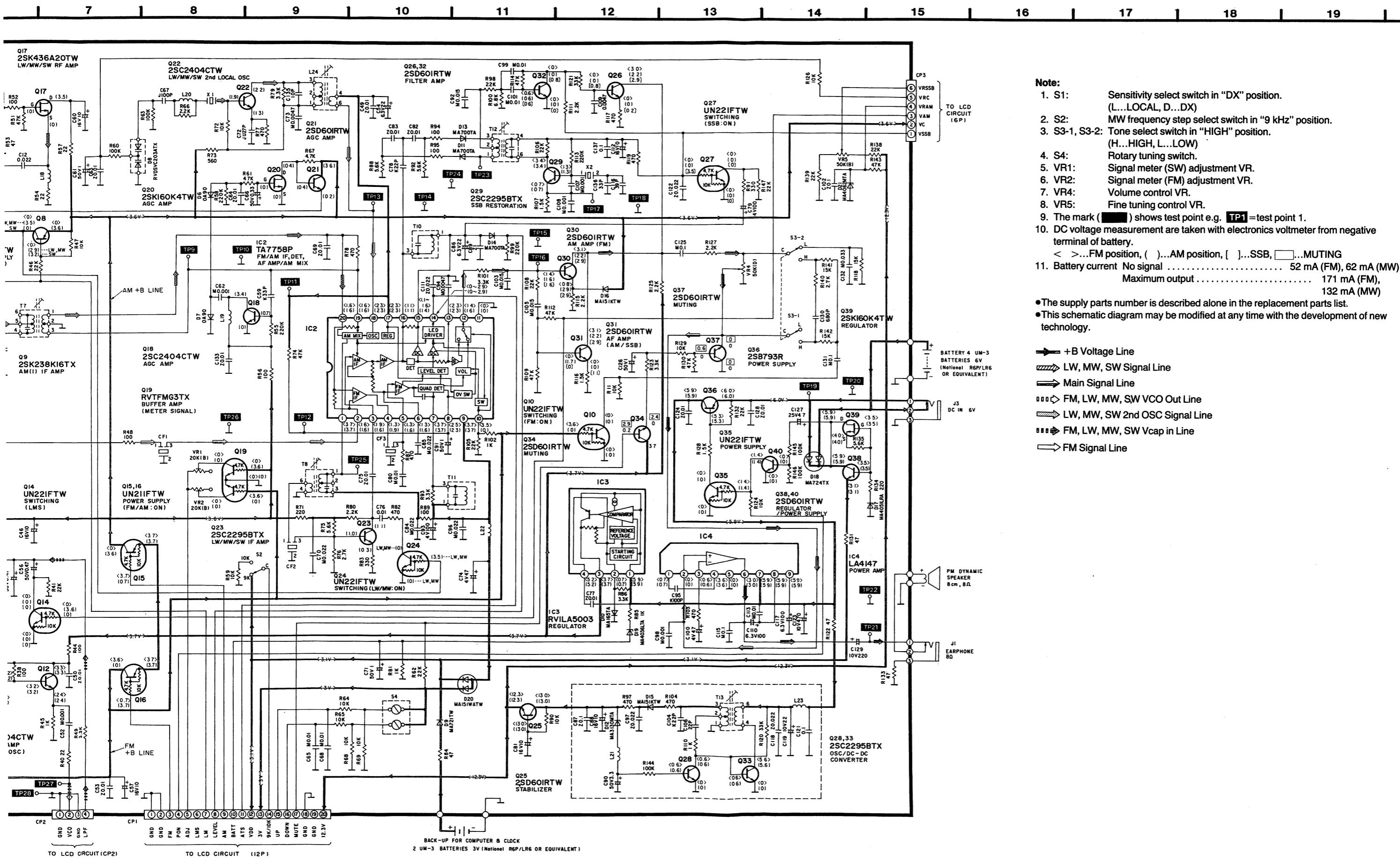


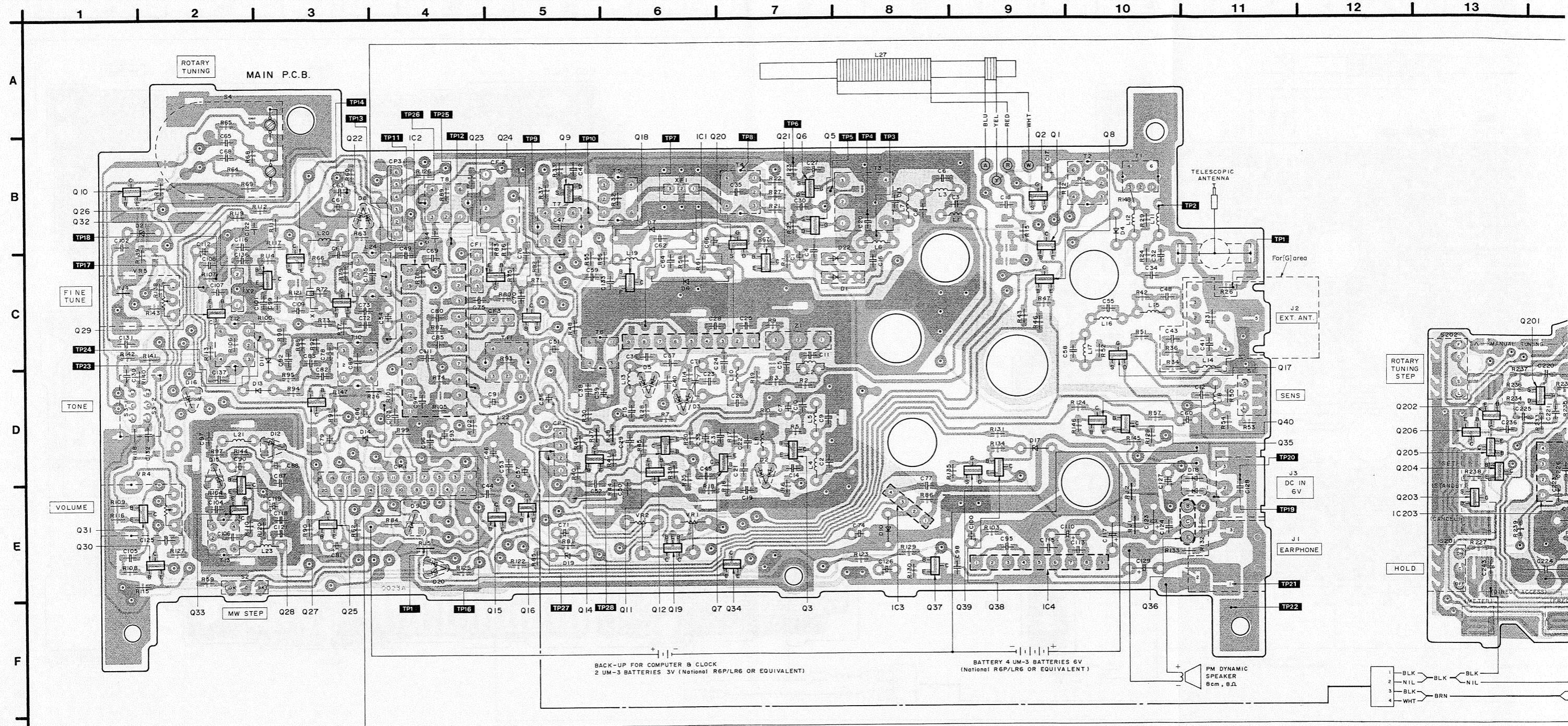
Fig. 3 (Common)

## SCHEMATIC DIAGRAM (for Main Circuit Section)





CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

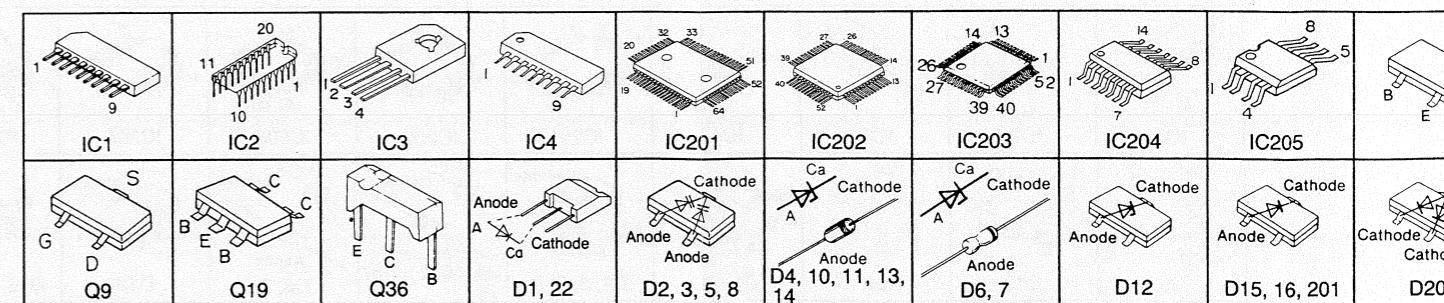


This printed circuit board is shown from the back side of chip parts

## **Notes:**

1. The circuit shown in ( ) on the conductor indicates printed circuit on the back side of the printed circuit board.
  2. The circuit shown in ( ) on the conductor indicates printed circuit on the front side of the printed circuit board.
  3. The symbols ( ) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.
  4. : Chip Jamper.
  5. : Chip Resistor.

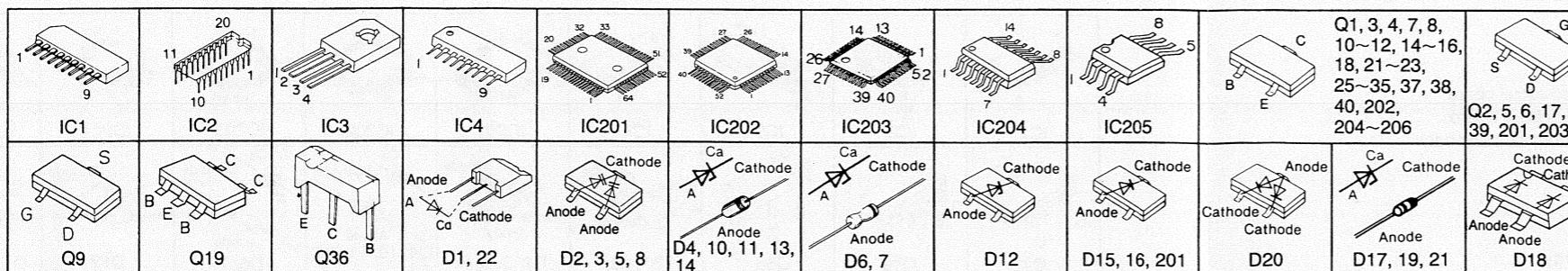
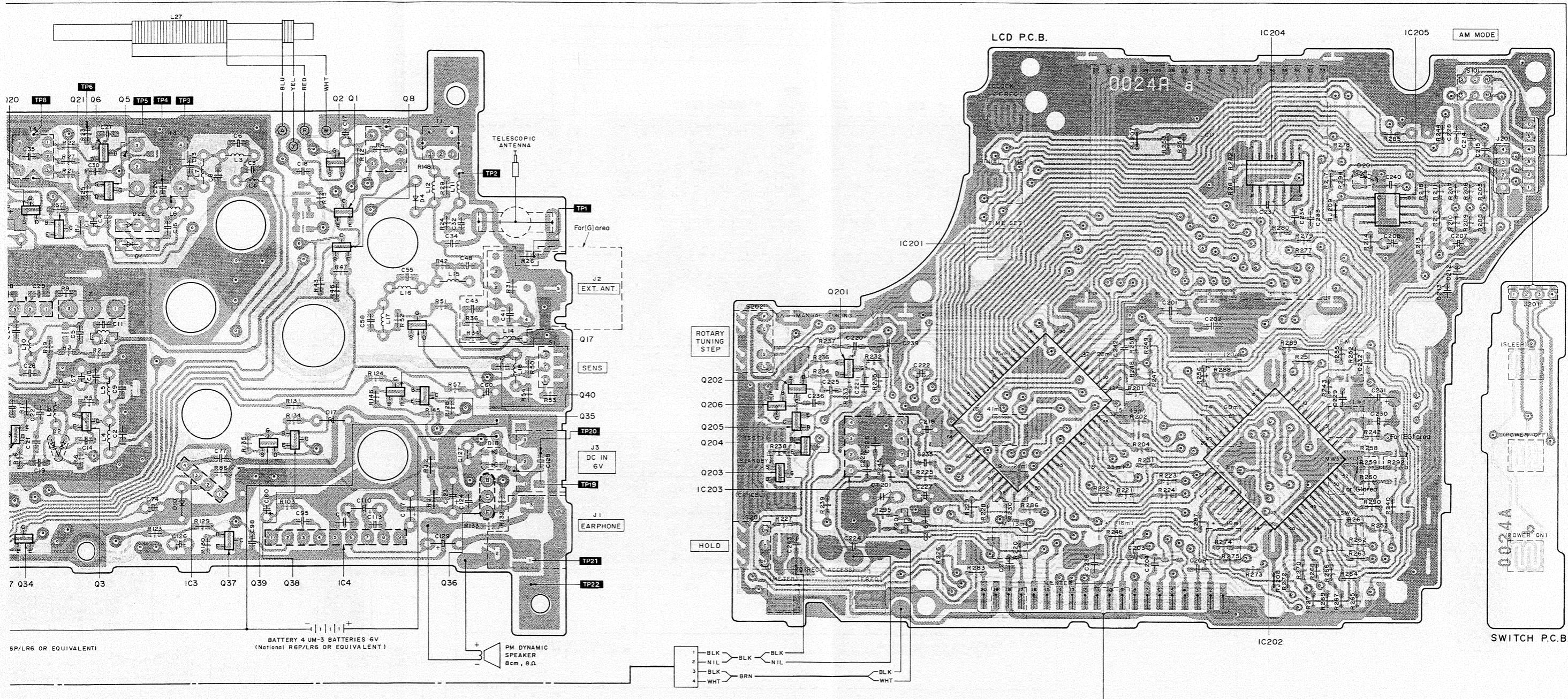
- This circuit board diagram may be modified at any time with the development of new technology.



RF-B65D

**RF-B65D**

7           |       8           |       9           |       10          |       11          |       12          |       13          |       14          |       15          |       16          |       17          |       18          |       19



**NOTES:**

BLK.....Black  
BLU.....Blue  
BRN....Brown  
GRY....Gray  
GRN....Green  
L.BLU...Light Blue

ORG	....Orange
PNK	....Pink
RED	....Red
SLD	....Shield Wire
VLT	....Violet
WHT	....White
YEL	....Yellow

# MEASUREMENTS AND ADJUSTMENTS

## ■ ALIGNMENT INSTRUCTIONS

### READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

#### Note:

- |  |  |
|--|--|
| 1. Set power on switch to ON.                    | 9. Set SSB switch to OFF or ON.          |
| 2. Set display select switch to FREQUENCY.       | 10. Set power source voltage to 6 V DC.  |
| 3. Set volume control to MAXIMUM.                | 11. Memorize the following frequency.    |
| 4. Set tone select switch to HIGH.               | FM CH1...87.5 MHz      LW CH1...155 kHz  |
| 5. Set hold switch to OFF.                       | CH2...90.0 MHz      CH2...450 kHz        |
| 6. Set sens switch to DX.                        | CH3...98.0 MHz      CH3...459 kHz        |
| 7. Set MW frequency step select switch to 9 kHz. | CH4...106.0 MHz      MW CH1...605 kHz    |
| 8. Set band switch to LW, MW, SW or FM.          | CH5...108.0 MHz      SW CH1...10,000 MHz |
|  | CH6...94.0 MHz      CH2...15,000 MHz     |
|  | CH3...29,999 MHz                         |

### EQUIPMENT REQUIRED

- |                                   |                          |
|-----------------------------------|--------------------------|
| 1. Frequency counter.             | 4. DC digital voltmeter. |
| 2. Oscilloscope (Dual dimension). | 5. Ampere meter.         |
| 3. RF voltmeter.                  | 6. Signal generator.     |

## ■ FM VCO, SW VCO, SW 2nd LOCAL OSC ALIGNMENT

BAND	FREQUENCY DISPLAY SETTING	DC DIGITAL VOLTMETER	FREQUENCY COUNTER	ADJUSTMENT (Refer to Fig. 1)	REMARKS
FM VCO ALIGNMENT					
(1) FM	108.00 MHz (CH5)	TP27 ...(+) TP28 ...(-)	—	L13	Adjust L13 for $9.00 \pm 0.1$ V reading on DC digital voltmeter.
SW VCO ALIGNMENT					
(2) SW	29,999 MHz (CH3)	"	—	L8	Adjust L8 for $10.00 \pm 0.1$ V reading on DC digital voltmeter.
SW 2nd LOCAL OSC ALIGNMENT					
(3) SW	10,000 MHz (CH1)	—	TP13 ...(+) TP14 ...(-)	L24	Adjust L24 for 55,395 MHz (EG...55,386 MHz) $\pm 100$ Hz reading on frequency counter.

## ■ SSB ALIGNMENT

BAND	FREQUENCY DISPLAY SETTING	INDICATOR (ELECTRONICS VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Refer to Fig. 1)	REMARKS
(4) SW	—	TP23 ...(+) TP24 ...(-)	T12	Adjust for maximum output.

## ■ FM IF, RF, AUTO STOP ZERO VOLTAGE ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		FREQUENCY DISPLAY SETTING	INDICATOR (ELECTRONICS VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Refer to Fig. 1)	REMARKS
	CONNECTIONS	FREQUENCY				
FM-IF ALIGNMENT						
(5) FM	Connect to test point TP7 through 0.001 $\mu$ F. Negative side to test point TP8	10.7 MHz (400 Hz SWP.)	Point of non-interference. (on/about 90 MHz)	Connect vert. amp. of scope to test point TP16. Negative side to test point TP15.	T6 (FM 1st IFT)	Adjust of maximum amplitude. (Refer to fig. 2.)
(6) FM	"	"	"	"	T11 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3.)

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		FREQUENCY DISPLAY SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT (Refer to Fig. 1)	REMARKS
	CONNECTIONS	FREQUENCY				
<b>FM-RF ALIGNMENT</b>						
(7)	FM	Connect to test point <b>TP1</b> through FM dummy antenna. Negative side to test point <b>TP2</b> .	90.00 MHz	90.00 MHz (CH2)	Connect vert. amp. of scope to test point <b>TP21</b> . Negative side to test point <b>TP22</b> .	L10 Adjust for maximum output.
(8)	FM	"	106.00 MHz	106.00 MHz (CH4)	"	CT1 Adjust for maximum output. Repeat steps (6), (7).
<b>FM-AUTO STOP ZERO VOLTAGE ALIGNMENT</b>						
(9)	FM	Connect to test point <b>TP1</b> through FM dummy antenna. Negative side to test point <b>TP2</b> .	98.00 MHz (40 dB DEMOD.)	98.00 MHz (CH3)	Connect vert. amp. of scope to test point <b>TP11</b> . Negative side to test point <b>TP12</b> .	T11 Adjust T9 for 0 ±0.05 V electronics voltmeter reading.
<b>■ SW IF, LW IF TRAP ALIGNMENT</b>						
BAND	SIGNAL GENERATOR or SWEEP GENERATOR		FREQUENCY DISPLAY SETTING	INDICATOR (ELECTRONICS VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Refer to Fig. 1)	REMARKS
	CONNECTIONS	FREQUENCY				
<b>SW-IF (1st) ALIGNMENT</b>						
(10)	SW	<b>TP3</b> ...(+) <b>TP4</b> ...(-)	55,843 MHz 95 dB, 4% Mod. with 1 kHz (Frequ. Mod.)	10,000 MHz (CH1)	Connect vert. amp. of scope to test point <b>TP9</b> . Negative side to test point <b>TP10</b> .	T4 T5 T7 Adjust for flat and maximum output. (Refer to Fig. 4)
(11)	SW	"	10,000 MHz 30% Mod. with 400 Hz (Ampli. Mod.)	10,000 MHz (CH1)	Output meter across Voice coil.	T7 Adjust for maximum output.
<b>SW-IF (2nd) ALIGNMENT</b>						
(12)	SW	<b>TP25</b> ...(+) <b>TP26</b> ...(-)	450 kHz...(G) 459 kHz...(EG) 30% Mod. with 400 Hz.	Point of noninterference. (on/about 600 kHz).	Connect vert. amp. of scope to test point <b>TP16</b> . Negative side to test point <b>TP15</b> .	T8 T10 Adjust for maximum output.
<b>LW-IF TRAP ALIGNMENT</b>						
(13)	LW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	450 kHz...(G) 459 kHz...(EG) 40 dB, 30% Mod. with 400 Hz	450 kHz...(G) 459 kHz...(EG) (CH2)	Output meter across Voice coil.	T1 (Trap Coil) Adjust for maximum output.
<b>■ SIGNAL METER ALIGNMENT</b>						
BAND	SIGNAL GENERATOR or SWEEP GENERATOR		FREQUENCY DISPLAY SETTING	ADJUSTMENT (Refer to Fig. 1)	REMARKS	
	CONNECTIONS	FREQUENCY				
(14)	FM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	94.00 MHz (30 dB)	94.00 MHz (CH6)	VR2	•Adjust VR2 50 that the all signal indicator appears. (Refer to Fig. 6)
(15)	SW	"	15,000 MHz (45 dB)	15,000 MHz (CH2)	VR1	•Adjust VR1 so that the all signal indicator appears. (Refer to Fig. 6)

**CLOCK ALIGNMENT**

BAND	FREQUENCY DISPLAY SETTING	FREQUENCY COUNTER	ADJUSTMENT (Refer to Fig. 5)	REMARKS																											
(16) SW	29,999 MHz...(G) 26,100 MHz...(EG)	TP5 ...(+) TP6 ...(-)	CT201	Adjust the frequencies according to room temperature. <table border="1"> <thead> <tr> <th>Room Temperature</th> <th>Area</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>8°C ≤ t &lt; 22°C</td> <td>(EG)</td> <td>81,945000 MHz ± 300 Hz</td> </tr> <tr> <td></td> <td>(G)</td> <td>85,844000 MHz ± 300 Hz</td> </tr> <tr> <td>22°C ≤ t &lt; 26°C</td> <td>(EG)</td> <td>81,944800 MHz ± 300 Hz</td> </tr> <tr> <td></td> <td>(G)</td> <td>85,843800 MHz ± 300 Hz</td> </tr> <tr> <td>26°C ≤ t &lt; 30°C</td> <td>(EG)</td> <td>81,944500 MHz ± 300 Hz</td> </tr> <tr> <td></td> <td>(G)</td> <td>85,843500 MHz ± 300 Hz</td> </tr> <tr> <td>30°C ≤ t &lt; 33°C</td> <td>(EG)</td> <td>81,944100 MHz ± 300 Hz</td> </tr> <tr> <td></td> <td>(G)</td> <td>85,843100 MHz ± 300 Hz</td> </tr> </tbody> </table>	Room Temperature	Area	Frequency	8°C ≤ t < 22°C	(EG)	81,945000 MHz ± 300 Hz		(G)	85,844000 MHz ± 300 Hz	22°C ≤ t < 26°C	(EG)	81,944800 MHz ± 300 Hz		(G)	85,843800 MHz ± 300 Hz	26°C ≤ t < 30°C	(EG)	81,944500 MHz ± 300 Hz		(G)	85,843500 MHz ± 300 Hz	30°C ≤ t < 33°C	(EG)	81,944100 MHz ± 300 Hz		(G)	85,843100 MHz ± 300 Hz
Room Temperature	Area	Frequency																													
8°C ≤ t < 22°C	(EG)	81,945000 MHz ± 300 Hz																													
	(G)	85,844000 MHz ± 300 Hz																													
22°C ≤ t < 26°C	(EG)	81,944800 MHz ± 300 Hz																													
	(G)	85,843800 MHz ± 300 Hz																													
26°C ≤ t < 30°C	(EG)	81,944500 MHz ± 300 Hz																													
	(G)	85,843500 MHz ± 300 Hz																													
30°C ≤ t < 33°C	(EG)	81,944100 MHz ± 300 Hz																													
	(G)	85,843100 MHz ± 300 Hz																													

**ALIGNMENT POINT**

•Please refer to Circuit Board and Wiring Connection Diagram for test point locations.

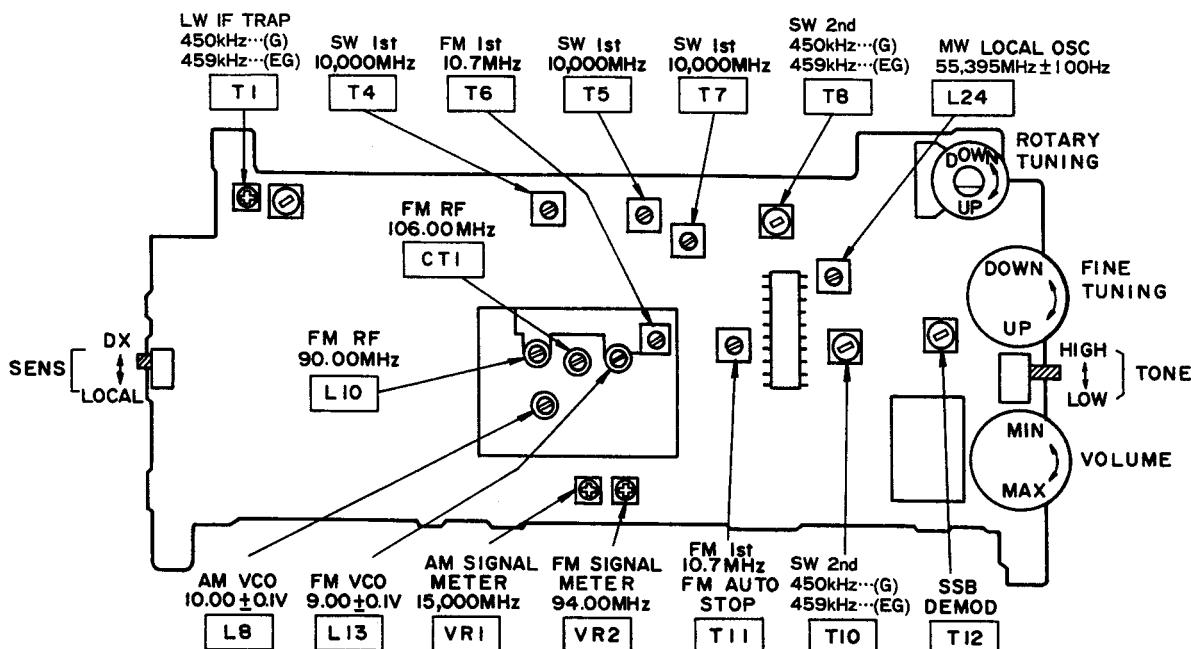


Fig. 1

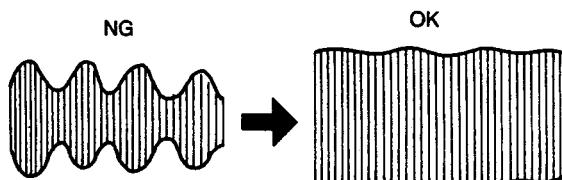
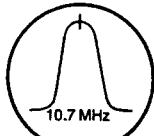


Fig. 4

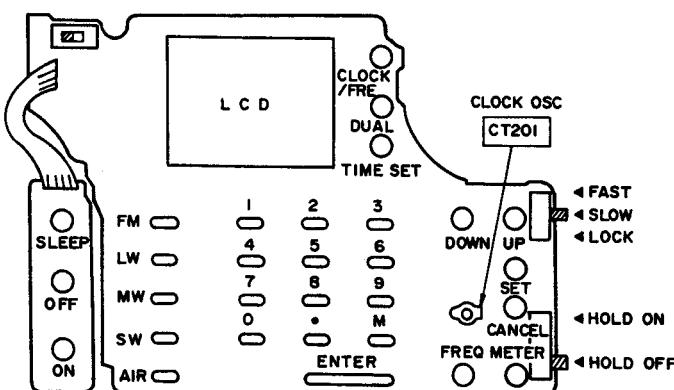


Fig. 5

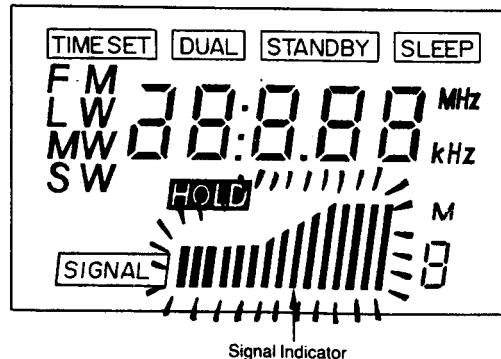


Fig. 6

# IC TERMINAL FUNCTION

## ■ IC201 (UPD1706G524)

### 1) Terminal view

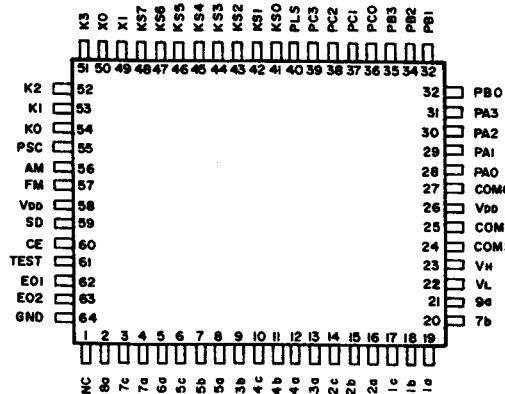


Fig. 1

### 2) Block diagram

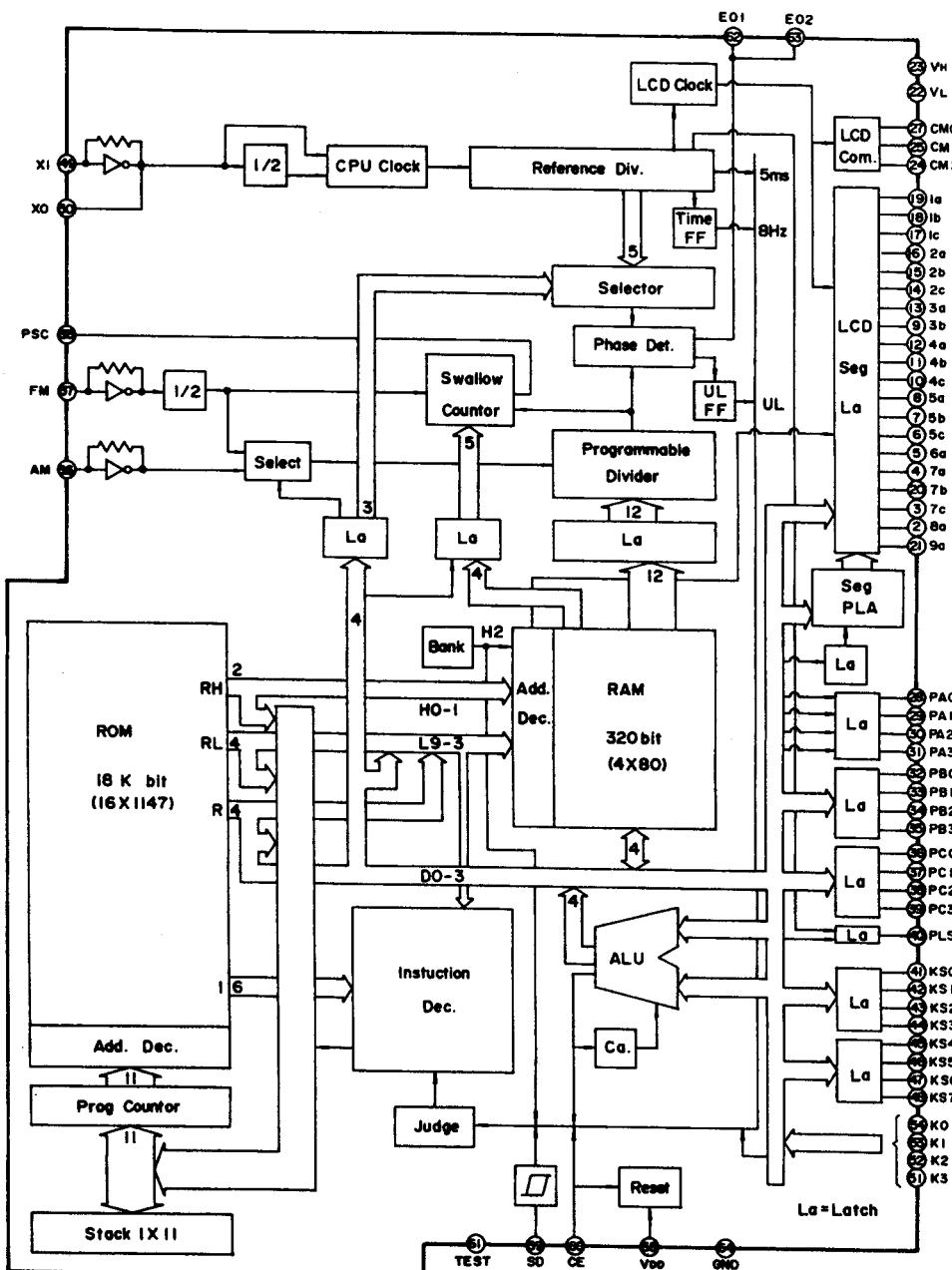
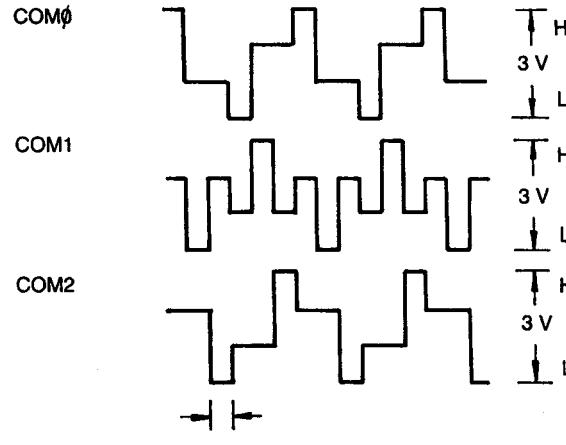
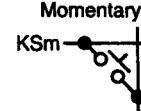
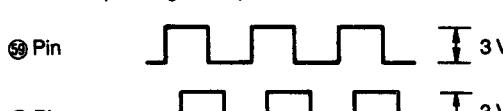


Fig. 2

## 3) Explanation of each terminal

Pin. No.	Symbol	Description
2~21	1a~9a, 1b~5b, 7b 1c, 2c, 4c, 5c, 7c	Output terminals for LCD segment signals. ( $\frac{1}{3}$ duty and $\frac{1}{3}$ bias LCD drive.) Refer to Fig. 3 for output waveforms.
22 23	V <sub>L</sub> V <sub>H</sub>	Intermediate voltage output terminals for LCD. In this model, a 0.1 $\mu$ F capacitor is connected to stabilize the intermediate voltage.
24 25 27	COM2 COM1 COM $\phi$	Terminals for LCD common signal output.  
26, 58	V <sub>DD</sub>	A voltage of $3\text{ V} \pm 10\%$ supply to this terminal during device.
28~31	PA0~PA3	Data signal output terminal.
32 33 34 35	PB $\phi$ PB1 PB2 PB3	Band select output terminals. Outputs a low signal during LW, MW and SW. Outputs a low signal during LW and MW. Outputs a low signal during LW, MW and SW. Outputs a low signal during FM.
36 37 38	PC $\phi$ PC1 PC2	Level meter comparator output terminals.
39	PC3	Muting output terminal. The noise generated from the speaker when the power is turned on and off is muted.
40	PLS	Key on terminal. Outputs a low when a key on the IC201 side is pressed.
41~44	KS $\phi$ ~KS3	Key return signal source output terminals for momentary switch on the key matrix.  
45 59	KS4 SD	Accept signal output terminal for data to IC202. High during operation. Transfer request signal output terminal or data to IC202. High during operation.  

Pin. No.	Symbol	Description
46	KS5	Status control output terminal for IC202. High during time setting.
47	KS6	Automatic control output terminal for IC202. High when power is on and during times setting.
48	KS7	Radio power on/off output terminal. High when radio is on.
49 50	X1 X $\phi$	Terminals used for connecting a quartz oscillator. Connects a 150 kHz quartz oscillator.
51	K3	Level meter comparator input terminal.
52	K2	Hold signal input terminal.
53 54	K1 K $\phi$	Terminals for key matrix key return signal input.
55	PSC	Select signal output terminal for prescaler divider ratio. This terminal generates pulses at the leading edge of the signal applied to the FM terminal (pin 57) and continues to do so until the contents of the internal swallow counter are 0. At this time, the divider ratio of the prescaler is $1/17$ . When the contents of the swallow counter become 0, this terminal goes low and the divider ratio of the prescaler becomes $1/16$ .
57	FM	Input terminal for the FM local oscillator (VCO) output divided by $1/16$ or $1/17$ by the prescaler.
60	CE	Device select signal input terminal. Set the terminal high to select a device and low to deselect a device.
61	TEST	Terminal to test the device. Normally connected to "GND".
62	E02	PLL error output terminal. The output signal is output to the LPF (Q201–Q206). If the divided oscillation frequency is higher than the standard frequency, a high signal is output. If lower, a low signal is output. If the same, the terminal floats.
64	GND	Ground terminal.

#### 4) Output signal waveforms of LCD segment

These output signal waveforms are produced when the frequency is SW 15,000 MHz, waveforms of the segments vary with frequency.

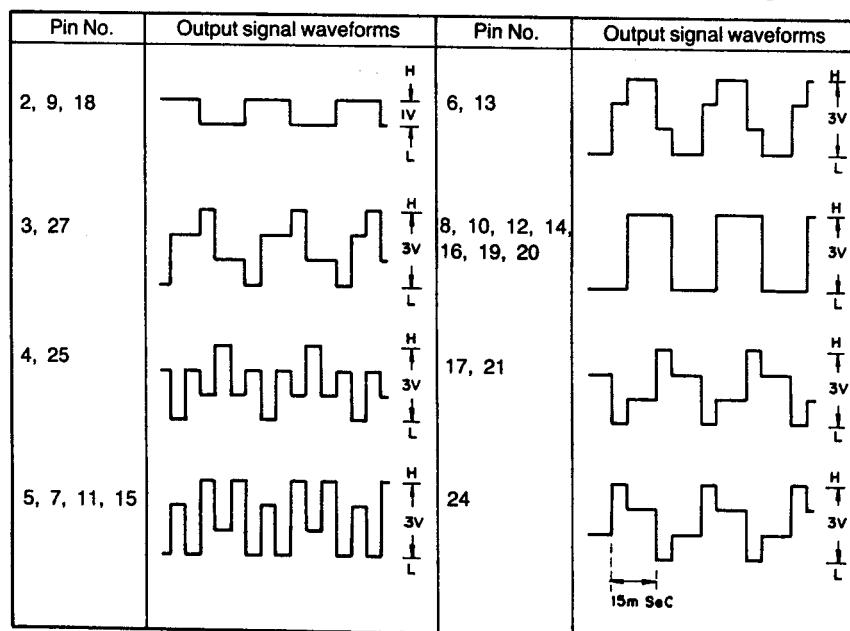


Fig. 3

## ■ IC202 (UPD7508G794)

1) Terminal view  
μPD7508G794 (IC202)

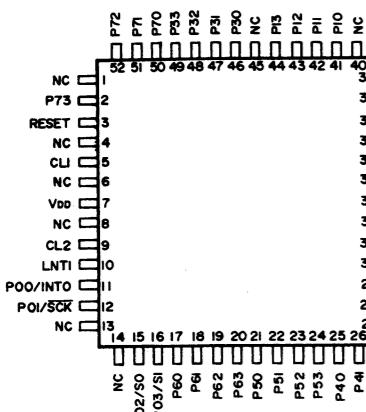


Fig. 4

2) Block diagram

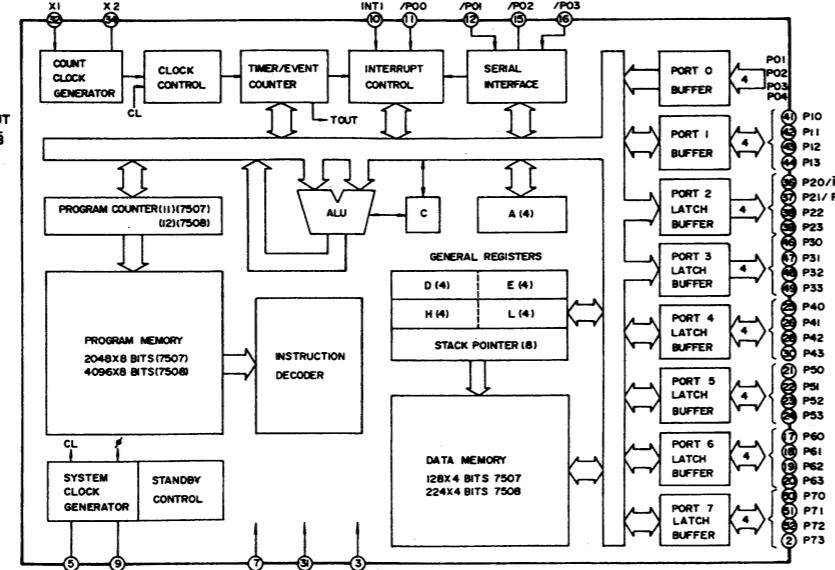


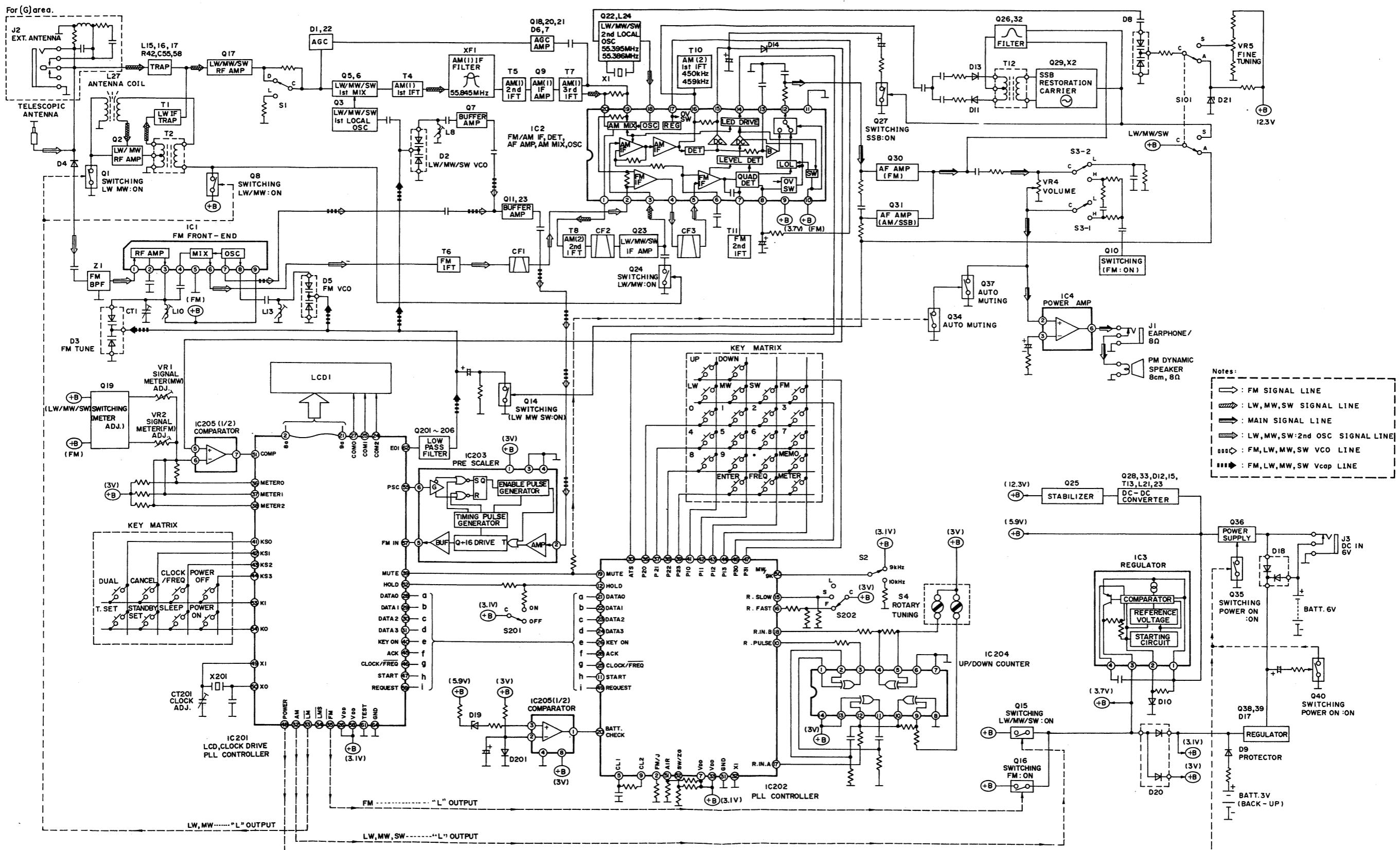
Fig. 5

3) Explanation of each terminal

Pin No.	Symbol	Description
2	P73	FM receiving frequency select terminal. Low=87.5~108.0 MHz (for main unit) High=76.0~108.0 MHz
3	REST	Reset signal input terminal.
5	CLI	Clock signal input terminal.
7, 33	Vdd	A voltage of 3 V±10% supply to this terminal during device.
9	CL2	Clock signal output terminal.
10	INT1	Trigger pulse input terminal for rotary tuning.
17	P60	Data input terminal for rotary tuning.
18	P61	Data input terminal for rotary tuning. During the down mode (leading edge of the rotary pulse, ROTARY INPUT A=ROTARY INPUT B):
	⑩ Pin (ROTARY PULSE)	
	⑯ Pin (ROTARY IN. A)	
	⑯ Pin (ROTARY IN. B)	
		max. 85 µs
		During the up mode (leading edge of the rotary pulse, ROTARY INPUT A=ROTARY INPUT B):
	⑩ Pin (ROTARY PULSE)	
	⑯ Pin (ROTARY IN. A)	
	⑯ Pin (ROTARY IN. B)	

Pin No.	Symbol	Description
11	PO0/INTO	Start signal input terminal.
12	PO1/SCK	Hold input terminal. A high signal sets the key lock mode.
15	PO2/S0	Rotary tuning speed select input terminal. High for slow and low for lock.
16	PO3/S1	Rotary tuning speed select input terminal. High for fast and low for lock.
19	P62	Tuning output terminal. During rotary tuning or manual tuning (up or down), a high signal is output from this terminal.
20	P63	Battery 4 V check input terminal. Monitors in intervals of 100 µs. If low for 3 consecutive times, a flashing "E" is displayed and 7 seconds later the power is switched off.
21~24	P50~P53	Data signal output terminal.
25	P40	CLOCK/FREQ display input terminal. High for "CLOCK" display and low for "FREQ" display.
26	P41	Key on terminal. Low when a key on the IC201 side is pressed.
28	P42	Accept signal input terminal for data from IC201. High during operation.
49	P33	Transfer request signal input terminal for data from IC201. High during operation.
	⑩ Pin	
	⑯ Pin	
30	P43	ATS (Auto scan stop) input terminal. If a low signal is input during auto scan for 118 msec or longer, the scan stops.
31	GND	Ground terminal.
32	X1	Ground terminal.
36~39	PSTB/P20~P23	Key return signal source output terminals for the momentary switches in the key matrix.
46	P30	Momentary switch
47	P31	KSm — Kn
41~44	P10~P13	Terminals for key matrix key return signal input.
50	P70	MW 9/10 kHz select terminal. High for 9 kHz and low for 10 kHz.
51	P71	Air band country select terminal. High for Japan and low for other countries.
52	P72	SW band country select terminal. High for Germany and low for other countries.

## BLOCK DIAGRAM



## Notes : \* Important safety notice:

Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)  
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC1	AN7205	IC, FRONT END	
IC2	TA7758P	IC, FM/AM IF, DET, etc	
IC3	RVILAS003	IC, REGULATOR	
IC4	LA4147	IC, POWER AMP	
IC201	UPD1706G524	IC, LCD/CLOCK DRIVE, PLL	
IC202	UPD7508G794	IC, PLL COUNTER	
IC203	RVIUPB556C	IC, PRE SCALER	
IC204	MN74HC386ST2	IC, UP/DOWN COUNTER	
IC205	BA10393FT	IC, COMPARATOR	
		TRANSISTORS	
Q1	2SD601RTW	TRANSISTOR	
Q2	2SK436A20TW	TRANSISTOR	
Q3	2SC2404CTW	TRANSISTOR	
Q5	2SK436A20TW	TRANSISTOR	
Q6	2SK436A20TW	TRANSISTOR	
Q7	2SC2404CTW	TRANSISTOR	
Q8	2SB709RTW	TRANSISTOR	
Q9	2SK238K16TX	TRANSISTOR	
Q10	UN221FTW	TRANSISTOR	
Q11	2SC2404CTW	TRANSISTOR	
Q12	2SC2404CTW	TRANSISTOR	
Q14	UN221FTW	TRANSISTOR	
Q15	UN211FTW	TRANSISTOR	
Q16	UN211FTW	TRANSISTOR	
Q17	2SK436A20TW	TRANSISTOR	
Q18	2SC2404CTW	TRANSISTOR	
Q19	RVTFMG3TX	TRANSISTOR	
Q20	2SK160K4TW	TRANSISTOR	
Q21	2SD601RTW	TRANSISTOR	
Q22	2SC2404CTW	TRANSISTOR	
Q23	2SC2295BTX	TRANSISTOR	
Q24	UN221FTW	TRANSISTOR	
Q25	2SD601RTW	TRANSISTOR	
Q26	2SD601RTW	TRANSISTOR	
Q27	UN221FTW	TRANSISTOR	
Q28	2SC2295BTX	TRANSISTOR	
Q29	2SC2295BTX	TRANSISTOR	
Q30	2SD601RTW	TRANSISTOR	
Q31	2SD601RTW	TRANSISTOR	
Q32	2SD601RTW	TRANSISTOR	
Q33	2SC2295BTX	TRANSISTOR	
Q34	2SD601RTW	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q35	UN221FTW	TRANSISTOR	
Q36	2SB793R	TRANSISTOR	
Q37	2SD601RTW	TRANSISTOR	
Q38	2SD601RTW	TRANSISTOR	
Q39	2SK160K4TW	TRANSISTOR	
Q40	2SD601RTW	TRANSISTOR	
Q201	2SK160K5TW	TRANSISTOR	
Q202	2SC1622D17TW	TRANSISTOR	
Q203	2SK160K5TW	TRANSISTOR	
Q204	2SC1622D17TW	TRANSISTOR	
Q205	2SB709RTX	TRANSISTOR	
Q206	2SC1622D17TW	TRANSISTOR	
		DIODES	
D1	MA553	DIODE	
D2	RVDSVC203ATX	DIODE	
D3	RVDSVC203ATX	DIODE	
D4	RVD1SS135TA	DIODE	
D5	RVDSVC203ATX	DIODE	
D6	OA90	DIODE	
D7	OA90	DIODE	
D8	RVDSVC203ATX	DIODE	
D9	MA721TW	DIODE	
D10	MA165TA	DIODE	
D11	MA700TA	DIODE	
D12	MA3130MTW	DIODE	
D13	MA700TA	DIODE	
D14	MA700TA	DIODE	
D15	MA151KTW	DIODE	
D16	MA151KTW	DIODE	
D17	MA4051LRA	DIODE	
D18	MA724IX	DIODE	
D19	MA4036LTA	DIODE	
D20	MA151WATW	DIODE	
D21	MA4062MTA	DIODE	
D22	MA553	DIODE	
D201	MA151KTW	DIODE	
		VARIABLE RESISTORS	
VR1	EVND4AA00B24	V. RESISTOR, SIGNAL METER	
VR2	EVND4AA00B24	V. RESISTOR, SIGNAL METER	
VR4	EVUJ05T02D54	V. RESISTOR, VOLUME	
VR5	EVUJ05T02B54	V. RESISTOR, BATT ERROR ADJ.	
		COMPONENT COMBINATIONS	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
Z1	RXABPMB8L	COMPONENT COMBINATION	#Z			OSCILLATORS	
		COILS		X1	RSXB5M4W01	OSCILLATOR	<G>
L1	RLQZPR47MT-Y	COIL		X1	RSXB5M3W01	OSCILLATOR	<EG>
L2	RLQY25S5-0	COIL		X2	RSXZ450KM01	OSCILLATOR	<G>
L3	RLQZP1R0MT-Y	COIL		X2	RSXZ459KM01	OSCILLATOR	<EG>
L4	RLQZPR22MT-Y	COIL		X201	RSXD150KS01	OSCILLATOR	
L5	RLQZPR56MT-Y	COIL				JUMPER	
L7	RLQZP1R5MT-Y	COIL		RJ1	RRD18XK000V	CHIP JUMPER	
L8	RL04N253-0	COIL		RJ2	RRD18XXK000V	CHIP JUMPER	
L9	RLQZP1R0MT-Y	COIL		RJ4	RRJ6GCJ000TE	CHIP JUMPER	
L10	RL04N125-0	COIL		RJ5	RRD18XK000V	CHIP JUMPER	
L11	RLQZP181KT-Y	COIL		RJ6	RRJ6GCJ000TE	CHIP JUMPER	
L12	RLQZP680KT-Y	COIL		RJ7	RRJ6GCJ000TE	CHIP JUMPER	
L13	RL04N125-0	COIL		RJ8	RRJ6GCJ000TE	CHIP JUMPER	
L14	RLQZP220KT-Y	COIL	<G>	RJ207	RRJ6GCJ000TE	CHIP JUMPER	
L15	RLQZP6R8KT-Y	COIL		RJ208	RRJ6GCJ000TE	CHIP JUMPER	
L16	RLQZP1R0MT-Y	COIL		RJ209	RRJ6GCJ000TE	CHIP JUMPER	
L17	RLQZPR47MT-Y	COIL				TRIMMER CAPACITORS	
L18	RLQZP221KT-Y	COIL		CT1	RCV10AF1-S	TRIMMER CAPACITOR	
L19	RLQZP47MT-Y	COIL		CT201	RCV20AF1-S	TRIMMER CAPACITOR	
L20	RLQY15G5-0	COIL				SWITCHES	
L21	RLQZP101KT-Y	COIL		S1	RSS2B43YA-M	SW, DX-LOCAL	
L22	RLQZP470KT-Y	COIL		S2	QSS1228A	SW, 9K/10K	
L23	RLQZP101KT-Y	COIL		S3	RSS2B004-Q	SW, TONE	
L24	RL03AD01-T	COIL		S4	EVQWWHF1025B	SW, ENCODER	
L27	RLF6019-0	ANT COIL		S101	RSS2B36ZA-M	SW, SSB	
		TRANSFORMERS		S201	RSS2B40ZA-Q	SW, HOLD	
T1	RL12AD04-T	TRANSFORMER		S202	RSS3B32ZA-A	SW, SLOW/FAST	
T2	RLA6C1-T	TRANSFORMER				TERMINALS	
T3	RLA3Z11-0	TRANSFORMER		J1	RJJD3M8ZA-C	JACK, EARPHONES	
T4	RL13A4-M	TRANSFORMER		J2	RJJDSM2ZA-H	JACK, EXT ANT	<G>
T5	RL13A4-M	TRANSFORMER		J3	RJJ1B12C-C	JACK, DC IN	
T6	RL14A4-M	TRANSFORMER				DISPLAYS	
T7	RL13A3-T	TRANSFORMER		LCD1	HLC9340	LCD	
T8	RL12A35-T	TRANSFORMER					
T10	RL12A002-T	TRANSFORMER					
T11	RL14A33-T	TRANSFORMER					
T12	RL12A003-M	TRANSFORMER					
T13	RL09A11-T	TRANSFORMER					
		FILTERS					
CF1	RVSFE107MAR	CERAMIC FILTER					
CF2	RVSFR450I1	CERAMIC FILTER	<G>				
CF2	RLFASFR459I1	CERAMIC FILTER	<EG>				
CF3	RVSFE107MAR	CERAMIC FILTER					
XF1	RVX55MB45A	FILTER					

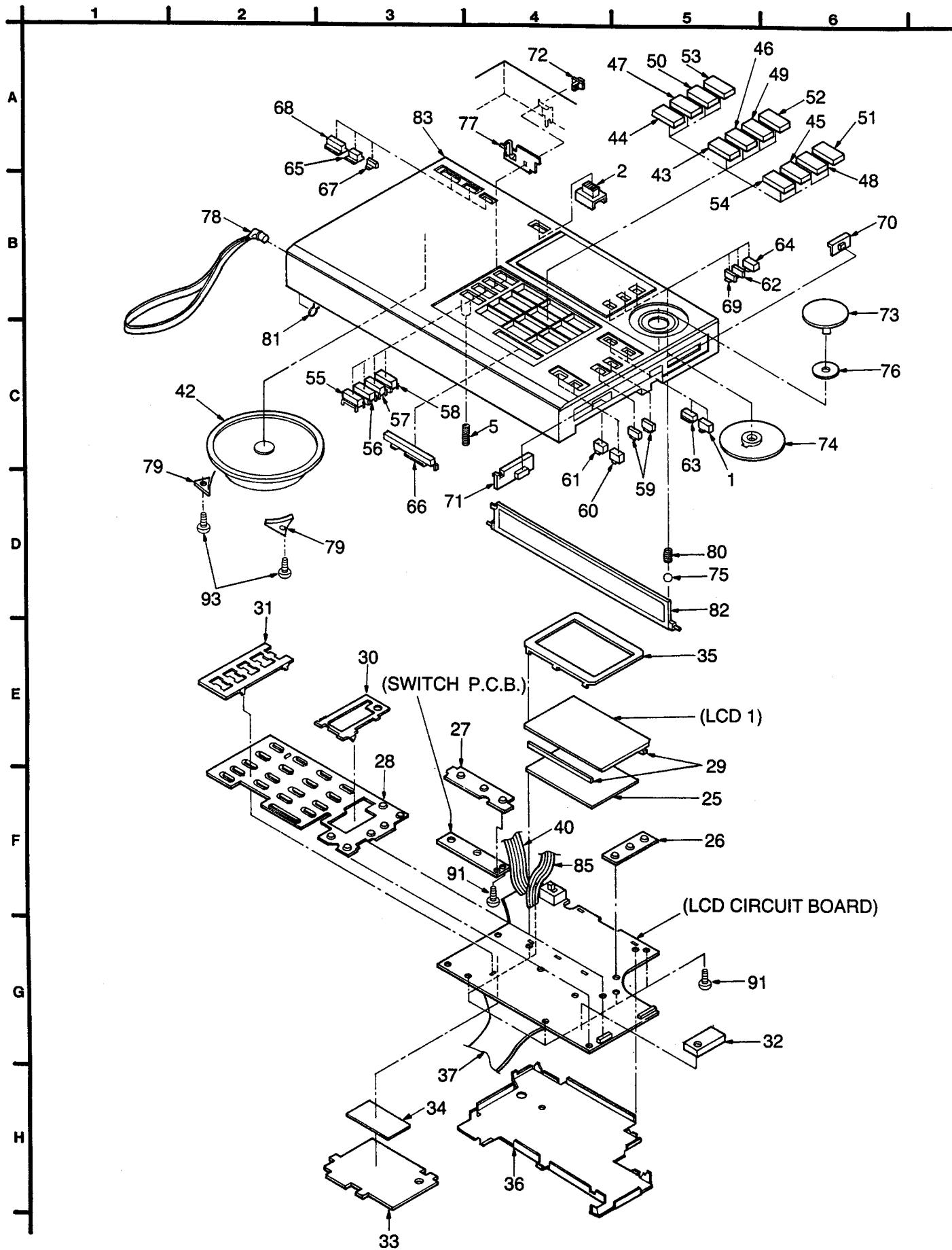
## Notes : \* Important safety notice:

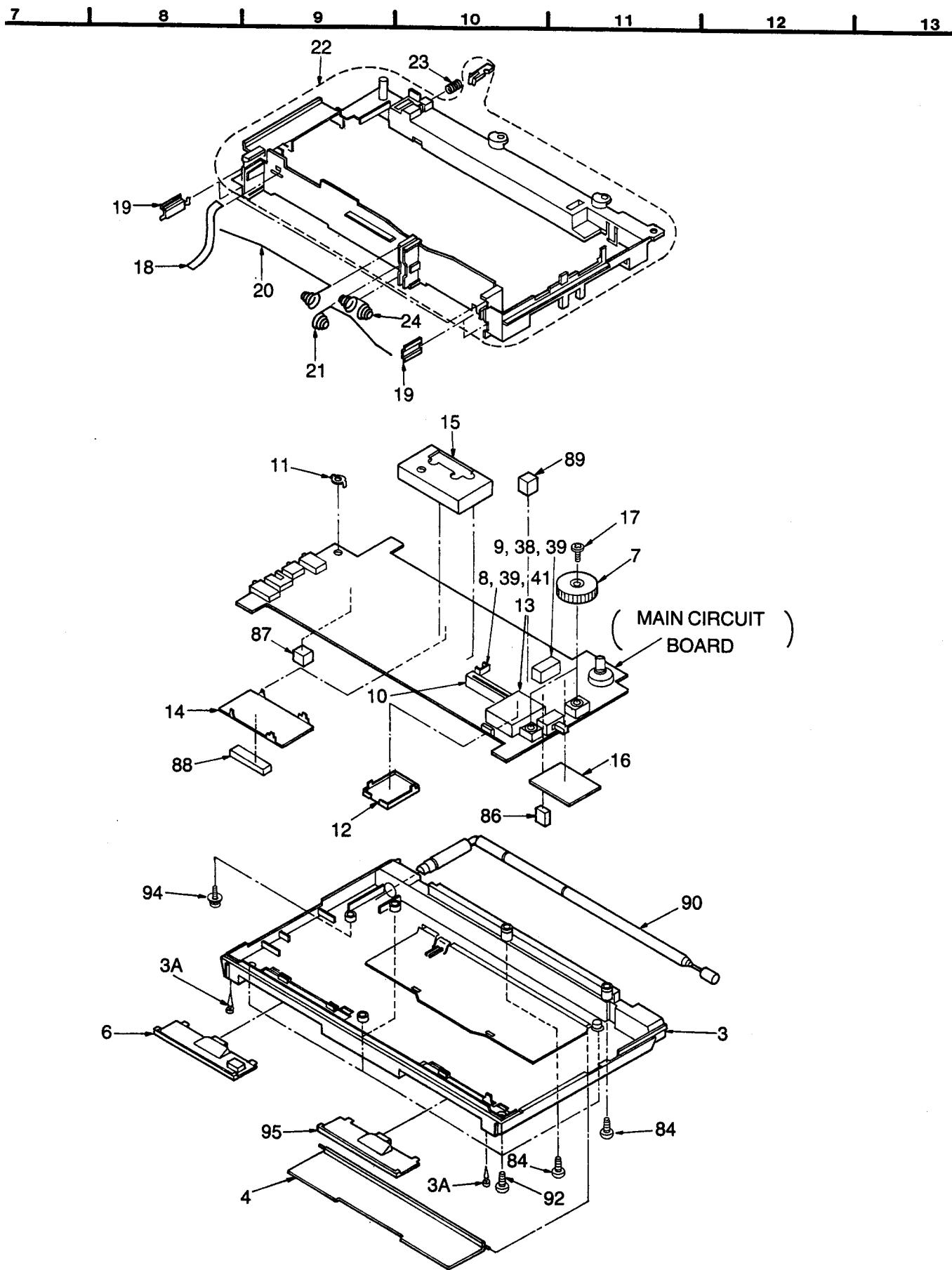
Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.  
 \* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)  
 Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		42	EAS8P24S	SPEAKER	
1	RBC1029ZB-0	BUTTON, MANUAL TUNING (UP)		43	RBC1023PA-0	BUTTON, (.)	
2	RGV0011-K	KNOB, SSB		44	RBC1023QA-0	BUTTON, (0)	
3	RYFFB65DG	REAR CABINET ASS'Y	<G>	45	RBC1023RA-0	BUTTON, (9)	
3	RYFFB65DEG	REAR CABINET ASS'Y	<EG>	46	RBC1023SA-0	BUTTON, (8)	
3A	RHG384ZA-0	RUBBER		47	RBC1023TA-0	BUTTON, (7)	
4	RKL30ZA	STAND		48	RBC1023UA-0	BUTTON, (6)	
5	RUQ52ZA	SPRING		49	RBC1023VA-0	BUTTON, (5)	
6	RYNFB65DG	BATTERY COMPARTMENT		50	RBC1023WA-0	BUTTON, (4)	
7	RBT260ZA-0	KNOB, FINE/VOL		51	RBC1023XA-0	BUTTON, (3)	
8	RJP4G18ZA	CONNECTOR		52	RBC1023YA-0	BUTTON, (2)	
9	RJP6G18ZA	CONNECTOR		53	RBC1023ZA-0	BUTTON, (1)	
10	RJS20Q5ZA	CONNECTOR		54	RBC1023OA-0	BUTTON, (0)	
11	RJT1073ZA	ANT. TERMINAL		55	RBC1024WB-0	BUTTON, BAND (SW)	
12	RSC0018	SHIELD PLATE		56	RBC1024XB-0	BUTTON, BAND (MW)	
13	RSC0019	SHIELD PLATE		57	RBC1024YB-0	BUTTON, BAND (LW)	
14	RSC0020	SHIELD PLATE		58	RBC1024ZB-0	BUTTON, BAND (FM)	
15	RSC0021	SHIELD PLATE		59	RBC1025ZA-0	BUTTON, STAND BY	
16	RSC0036	SHIELD PLATE		60	RBC1026YB-0	BUTTON, ACCESS (METER)	
17	XSHR17+2FZ	SCREW		61	RBC1026ZB-0	BUTTON, ACCESS (FREQ.)	
18	RHS32ZA	TAPE		62	RBC1027ZA-0	BUTTON, DIAL TIME	
19	RJC3F0010ZC	TERMINAL		63	RBC1028ZB-0	BUTTON, MANUAL TUNING	
20	RJC70012ZA	BATT. SPRING		64	RBC1030ZA-0	BUTTON, CLOCK/FREQ.	
21	RJC70013ZA	BATT. SPRING		65	RBC1031ZB-0	BUTTON, POWER OFF	
22	RMK0022-K	CHASSIS	<G>	66	RBC1032ZB-0	BUTTON, ENTER	
22	RMK0022A-K	CHASSIS	<EG>	67	RBC1033ZA-0	BUTTON, SLEEP	
23	RUQ52ZA	SPRING		68	RBC1034ZB-0	BUTTON, POWER ON	
24	RJC70014ZA	BATT. SPRING		69	RBC1041ZA-0	BUTTON, TIME SET	
25	RGX1659ZA-0	PLATE		70	RBD429ZA-0	KNOB, SLOW FAST	
26	RHG5043ZA	RUBBER		71	RBD430ZA-0	KNOB, HOLD	
27	RHG5044ZA	RUBBER		72	RBD431ZA-0	KNOB, OPEN	
28	RHG5045ZA	RUBBER		73	RBN754ZA-0	KNOB, ROTARY TUNING	
29	RHG5047ZA	RUBBER		74	RBT284ZA-0	KNOB, ROTARY TUNING	
30	RMC1099ZA	SHIELD PLATE		75	RHM156ZA	STEEL BALL	
31	RMC1100ZA	SHIELD PLATE		76	RHR2110ZA	SPACER	
32	RMC1101ZA	SHIELD PLATE		77	RHR3102ZA-0	LEVER	
33	RMC1105ZA	SHIELD PLATE		78	RKH146ZA-0	CARRYING STRAP	
34	RMC1115ZA	SHIELD PLATE		79	RMS12B	HOLDER	
35	RSC0017	LCD BORDER		80	RUQ53ZA	SPRING	
36	RSC0037	SHIELD PLATE		81	XUC3FY-V	C. RING	
37	RUP2118ZAM	F. P. C		82	RYPFB65DG	STATION REMINDER	
38	RJS6L4ZA	CONNECTOR (6P)		83	RYMFB65DG	FRONT CABINET ASS'Y	<G>
39	RJT807ZB-X	TERMINAL		83	RYMFB65DEG	FRONT CABINET ASS'Y	<EG>
40	WBB6GB-14	FLAT CABLE WIRE		84	RHE5128ZA	SCREW	
41	RJSS4L4ZA-X	SOCKET		85	WWB84GB-6	FLAT CABLE	
				86	RHG1041ZA	RUBBER	
				87	RHG1115ZA	RUBBER	



# CABINET PARTS LOCATION





# ■ RESISTORS & CAPACITORS

Notes : \* Important safety notice :

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\* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)  
Parts without these indications can be used for all areas.

## Numbering System For Resistors

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1K $\Omega$ )
ERX	2	AN	J	471

Type	Wattage (2W)	Shape	Tolerance	Value (470 $\Omega$ )
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## Numbering System For Capacitors

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001 $\mu$ F)	Tolerance	Unique
ECEA	50	M	330	

Type	Voltage (50V)	Characteristics	Value (33 $\mu$ F)	
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● Capacity values are in microfarads ( $\mu$ F) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).

● Resistance values are in ohms ( $\Omega$ ), unless specified otherwise, 1K = 1,000 $\Omega$ , 1M = 1,000k $\Omega$

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : $\pm 5\%$
ERG : Metal Oxide	14 : 1/4W	F : $\pm 1\%$
ERQ : Fuse Type Metal	1A : 1W	G : $\pm 2\%$
ERX : Metal Film	S2 : 1/4W	J : $\pm 5\%$
ERD L : Carbon (chip)	S1 : 1/2W	K : $\pm 10\%$
ERO K : Metal Film (chip)	2F : 1/4W	M : $\pm 20\%$
ERC : Solid	2A : 2W	
ERF : Incombustible Box-Shaped	6G : 1/10W	
ERM : Wire-Wound	8G : 1/8W	
RRJ : Chip Resistor		
ERJ : Chip Resistor		

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic	0J : 6.3V	K : $\pm 10\%$
ECCD : Ceramic	1C : 16V	M : $\pm 20\%$
ECKD : Ceramic Capacitor	1H : 50V	Z : + 80% - 20%
ECQM : Polyester	50 : 50V	
ECQP : Polypropylene	2H : 500V	J : $\pm 5\%$
ECG : Ceramic	2A : 100V	G : $\pm 2\%$
ECEA N : Non Polar Electrolytic	1 : 100V	F : $\pm 1\%$
OCU : Ceramic (Chip Type)	KC : 400V AC	C : $\pm 0.25\mu$ F
ECUX : Ceramic (Chip Type)	KC : 125V AC	D : $\pm 0.5\mu$ F
ECF : Semiconductor	(UL)	
EECW : Liquid electrolyte double layer capacitor		

Ref. No.	Part No.	Part Name & Description	Remarks
		RESISTORS	
R1	RRJ6GCJ102TE	RESISTOR 1/10 W	
R2	RRJ6GCJ222TE	RESISTOR 1/10 W 1K	
R3	RRJ6GCJ101TE	RESISTOR 1/10 W 2.2K	
R4	RRJ6GCJ220TE	RESISTOR 1/10 W 100	
R5	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R6	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R7	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R9	RRJ6GCJ220TE	RESISTOR 1/10 W 22	
R10	RRJ6GCJ221TE	RESISTOR 1/10 W 220	
R11	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R12	RRJ6GCJ220TE	RESISTOR 1/10 W 22	
R14	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R15	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R16	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R17	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R18	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R19	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R20	RRJ6GCJ221TE	RESISTOR 1/10 W 220	
R21	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R22	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R23	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R24	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R25	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R26	RRJ6GCJ333TE	RESISTOR 1/10 W 33K	
R27	RRJ6GCJ101TE	RESISTOR 1/10 W 100	

Ref. No.	Part No.	Part Name & Description	Remarks
R28	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R29	RRJ6GCJ562TE	RESISTOR 1/10 W 5.6K	
R30	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R31	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	<G>
R32	RRJ6GCJ332TE	RESISTOR 1/10 W 3.3K	
R33	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R34	RRJ6GCJ331TE	RESISTOR 1/10 W 330	<G>
R35	RRJ6GCJ224TE	RESISTOR 1/10 W 220K	
R36	RRJ6GCJ470TE	RESISTOR 1/10 W 47	<G>
R37	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R38	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R40	RRJ6GCJ220TE	RESISTOR 1/10 W 22	
R41	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R42	RRJ6GCJ152TE	RESISTOR 1/10 W 22K	
R43	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R44	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R45	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R46	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R47	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R48	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R49	RRJ6GCJ332TE	RESISTOR 1/10 W 33K	
R50	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R51	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R52	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R53	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R54	RRJ6GCJ220TE	RESISTOR 1/10 W 22	
R55	RRJ6GCJ224TE	RESISTOR 1/10 W 220K	
R56	RRJ6GCJ101TE	RESISTOR 1/10 W 100	

Ref. No.	Part No.	Part Name & Description	Remarks
R57	RRJ6GCJ220TE	RESISTOR 1/10 W 22	
R58	RRJ6GCJ224TE	RESISTOR 1/10 W 220K	
R59	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R60	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R61	RRJ6GCJ472TE	RESISTOR 1/10 W 4.7K	
R62	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R63	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R64	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R65	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R66	RRJ6GCJ222TE	RESISTOR 1/10 W 2.2K	
R67	RRJ6GCJ472TE	RESISTOR 1/10 W 4.7K	
R68	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R69	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R71	RRJ6GCJ221TE	RESISTOR 1/10 W 220	
R72	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R73	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R74	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R75	RRJ6GCJ562TE	RESISTOR 1/10 W 5.6K	
R76	RRJ6GCJ227TE	RESISTOR 1/10 W 2.7K	
R77	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R78	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R79	RRJ6GCJ332TE	RESISTOR 1/10 W 3.3K	
R80	RRJ6GCJ222TE	RESISTOR 1/10 W 2.2K	
R81	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R82	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R83	RRJ6GCJ331TE	RESISTOR 1/10 W 330	
R84	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R85	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R86	RRJ6GCJ332TE	RESISTOR 1/10 W 3.3K	
R87	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R88	RRJ6GCJ562TE	RESISTOR 1/10 W 5.6K	
R89	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R90	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R91	RRJ6GCJ331TE	RESISTOR 1/10 W 330	
R92	RRJ6GCJ562TE	RESISTOR 1/10 W 5.6K	
R93	RRJ6GCJ332TE	RESISTOR 1/10 W 3.3K	
R94	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R95	RRJ6GCJ101TE	RESISTOR 1/10 W 100	
R97	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R98	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R99	RRJ6GCJ224TE	RESISTOR 1/10 W 220K	
R100	RRJ6GCJ682TE	RESISTOR 1/10 W 6.8K	
R101	RRJ6GCJ332TE	RESISTOR 1/10 W 3.3K	
R102	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R103	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R104	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R105	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R106	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R107	RRJ6GCJ152TE	RESISTOR 1/10 W 1.5K	
R108	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R109	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R110	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R111	RRJ6GCJ222TE	RESISTOR 1/10 W 2.2K	
R112	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R113	RRJ6GCJ224TE	RESISTOR 1/10 W 220K	
R114	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R115	RRJ6GCJ272TE	RESISTOR 1/10 W 2.7K	
R116	RRJ6GCJ152TE	RESISTOR 1/10 W 1.5K	
R117	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R118	RRJ6GCJ153TE	RESISTOR 1/10 W 15K	
R119	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R120	RRJ6GCJ333TE	RESISTOR 1/10 W 33K	
R121	RRJ6GCJ333TE	RESISTOR 1/10 W 33K	
R122	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R123	RRJ6GCJ332TE	RESISTOR 1/10 W 3.3K	
R124	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R125	RRJ6GCJ222TE	RESISTOR 1/10 W 2.2K	
R126	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R127	RRJ6GCJ222TE	RESISTOR 1/10 W 2.2K	
R128	RRJ6GCJ152TE	RESISTOR 1/10 W 1.5K	
R129	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R130	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R131	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R132	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R133	RRJ6GCJ470TE	RESISTOR 1/10 W 47	
R134	RRJ6GCJ221TE	RESISTOR 1/10 W 220	
R135	RRJ6GCJ562TE	RESISTOR 1/10 W 5.6K	
R138	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R139	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R140	RRJ6GCJ272TE	RESISTOR 1/10 W 2.7K	
R141	RRJ6GCJ153TE	RESISTOR 1/10 W 15K	
R142	RRJ6GCJ153TE	RESISTOR 1/10 W 15K	
R143	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R144	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R145	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R146	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R147	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R201	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R202	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R204	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R205	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R206	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R207	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R208	RRJ6GCJ394TE	RESISTOR 1/10 W 390K	
R209	RRJ6GCJ184TE	RESISTOR 1/10 W 180K	
R210	RRJ6GCJ823TE	RESISTOR 1/10 W 82K	
R211	RRJ6GCJ273TE	RESISTOR 1/10 W 27K	
R212	RRJ6GCJ822TE	RESISTOR 1/10 W 8.2K	
R213	RRJ6GCJ472TE	RESISTOR 1/10 W 4.7K	
R214	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	
R217	RRJ6GCJ272TE	RESISTOR 1/10 W 2.7K	
R218	RRJ6GCJ153TE	RESISTOR 1/10 W 15K	
R220	RRJ6GCJ102TE	RESISTOR 1/10 W 1K	
R221	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
R218	RRJ6GCJ153TE	RESISTOR 1/10 W 15K		R272	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R220	RRJ6GCJ102TE	RESISTOR 1/10 W 1K		R273	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R221	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R274	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R222	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R275	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R223	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R277	RRJ6GCJ333TE	RESISTOR 1/10 W 33K	
R224	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R278	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R225	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R279	RRJ6GCJ333TE	RESISTOR 1/10 W 33K	
R226	RRJ6GCJ470TE	RESISTOR 1/10 W 47		R280	RRJ6GCJ104TE	RESISTOR 1/10 W 100K	
R227	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R281	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R228	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R282	RRJ6GCJ473TE	RESISTOR 1/10 W 47K	
R229	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R283	RRJ6GCJ471TE	RESISTOR 1/10 W 470	
R230	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R285	RRJ6GCJ681TE	RESISTOR 1/10 W 680	
R231	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		R286	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R232	RRJ6GCJ332TE	RESISTOR 1/10 W 3.3K		R287	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R233	RRJ6GCJ331TE	RESISTOR 1/10 W 330		R288	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R234	RRJ6GCJ104TE	RESISTOR 1/10 W 100K		R289	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R235	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		R290	RRJ6GCJ103TE	RESISTOR 1/10 W 10K	
R236	RRJ6GCJ102TE	RESISTOR 1/10 W 1K		R292	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	<EG>
R237	RRJ6GCJ182TE	RESISTOR 1/10 W 1.8K		R294	RRJ6GCJ153TE	RESISTOR 1/10 W 15K	
R238	RRJ6GCJ102TE	RESISTOR 1/10 W 1K		R295	RRJ6GCJ105TE	RESISTOR 1/10 W 1M	
R239	RRJ6GCJ330TE	RESISTOR 1/10 W 33				CAPACITOR	
R240	RRJ6GCJ101TE	RESISTOR 1/10 W 100					
R242	RRJ6GCJ104TE	RESISTOR 1/10 W 100K					
R243	RRJ6GCJ564TE	RESISTOR 1/10 W 560K					
R244	RRJ6GCJ102TE	RESISTOR 1/10 W 1K		C1	ECEA1CK100I	CAPACITOR 16 V 10	
R245	RRJ6GCJ471TE	RESISTOR 1/10 W 470		C2	RCUV1H070DC	CAPACITOR 50 V 7P	
R246	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C3	RCUV1H820KC	CAPACITOR 50 V 2P	
R247	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C4	RCUV1E103MD	CAPACITOR 25 V 0.01	
R248	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C5	RCUV1H472MD	CAPACITOR 50 V 0.0047	
R249	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C6	RCUV1H050DC	CAPACITOR 50 V 5P	
R250	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C7	ECEA1CK100I	CAPACITOR 16 V 10	
R251	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C8	RCUV1H680KC	CAPACITOR 50 V 68P	
R252	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C9	RCUV1H390KC	CAPACITOR 50 V 39P	
R253	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C10	RCUV1H103ZF	CAPACITOR 50 V 0.01	
R254	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C11	RCUV1H470KC	CAPACITOR 50 V 47P	
R255	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C12	RCUV1E223MD	CAPACITOR 25 V 0.022	
R256	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C13	RCUV1H020CC	CAPACITOR 50 V 2P	
R257	RRJ6GCJ105TE	RESISTOR 1/10 W 1M		C14	RCUV1H020CC	CAPACITOR 50 V 2P	
R258	RRJ6GCJ223TE	RESISTOR 1/10 W 22K		C15	RCUV1H102MD	CAPACITOR 50 V 0.001	
R259	RRJ6GCJ223TE	RESISTOR 1/10 W 22K	<G>	C16	RCUV1E223MD	CAPACITOR 25 V 0.022	
R260	RRJ6GCJ223TE	RESISTOR 1/10 W 22K		C17	ECEA1CK100I	CAPACITOR 16 V 10	
R261	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C18	RCUV1E103MD	CAPACITOR 25 V 0.01	
R262	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C19	RCUV1H150KC	CAPACITOR 50 V 15P	
R263	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C20	RCUV1H050DC	CAPACITOR 50 V 5P	
R264	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C21	RCUV1H390KC	CAPACITOR 50 V 39P	
R265	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C22	RCUV1H220KC	CAPACITOR 50 V 22P	
R266	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C23	RCUV1H102MD	CAPACITOR 50 V 0.001	
R267	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C24	RCUV1H100KC	CAPACITOR 50 V 10P	
R268	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C25	RCUV1H472MD	CAPACITOR 50 V 0.0047	
R269	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C26	RCUV1H472MD	CAPACITOR 50 V 0.0047	
R270	RRJ6GCJ103TE	RESISTOR 1/10 W 10K		C27	RCUV1H472MD	CAPACITOR 50 V 0.0047	
R271	RRJ6GCJ473TE	RESISTOR 1/10 W 47K		C28	RCUV1H050DC	CAPACITOR 50 V 5P	
				C29	RCUV1H103ZF	CAPACITOR 50 V 0.01	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
C30	RCUV1H472MD	CAPACITOR 50 V 0.0047		C82	RCUV1H103ZF	CAPACITOR 50 V 0.01	
C31	RCUV1E103MD	CAPACITOR 25 V 0.01		C83	RCUV1H103ZF	CAPACITOR 50 V 0.01	
C32	RCUV1H680KC	CAPACITOR 50 V 68P		C84	RCUV1E223MD	CAPACITOR 25 V 0.022	
C33	ECEA0GK470I	CAPACITOR 4 V 47		C85	RCUV1E223MD	CAPACITOR 25 V 0.022	
C34	RCUV1H680KC	CAPACITOR 50 V 68P		C86	ECEAOJK220I	CAPACITOR 6.3V 22	
C35	RCUV1H472MD	CAPACITOR 50 V 0.0047		C87	RCUV1E104ZF	CAPACITOR 25 V 0.1	
C36	RCUV1H220KC	CAPACITOR 50 V 22P		C88	ECEA1CKS100I	CAPACITOR 16 V 10	
C37	RCUV1H150KC	CAPACITOR 50 V 15P		C89	ECUV1C105ZF	CAPACITOR 16 V 1	
C38	RCUV1H103ZF	CAPACITOR 50 V 0.01		C90	ECEA1HKS3R3I	CAPACITOR 50 V 3.3	
C39	ECEA1CK100I	CAPACITOR 16 V 10		C91	ECEA1HK010I	CAPACITOR 50 V 1	
C40	RCUV1H030CC	CAPACITOR 50 V 3P		C92	RCUV1E153MD	CAPACITOR 25 V 0.015	
C41	RCUV1H221K	CAPACITOR 50 V 220P	<G>	C93	ECEA0GK10II	CAPACITOR 4 V 100	
C42	RCUV1H472MD	CAPACITOR 50 V 0.0047		C94	RCUV1H472MD	CAPACITOR 50 V 0.0047	
C43	RCUV1H681K	CAPACITOR 50 V 680P	<G>	C95	RCUV1H101K	CAPACITOR 50 V 100P	
C44	RCUV1H103ZF	CAPACITOR 50 V 0.001		C96	RCUV1E223MD	CAPACITOR 25 V 0.022	
C45	RCUV1H020CC	CAPACITOR 50 V 2P		C97	RCUV1E223MD	CAPACITOR 25 V 0.022	
C46	ECEA1CK100I	CAPACITOR 16 V10		C98	RCUV1H102MD	CAPACITOR 50 V 0.001	
C47	RCUV1H103ZF	CAPACITOR 50 V 0.01		C99	RCUV1E103MD	CAPACITOR 25 V 0.01	
C48	RCUV1H221K	CAPACITOR 50 V 220		C100	ECEA0GK470I	CAPACITOR 4 V 47	
C49	RCUV1H103ZF	CAPACITOR 50 V 0.01		C101	RCUV1E103MD	CAPACITOR 25 V 0.01	
C50	RCUV1H103ZF	CAPACITOR 50 V 0.01		C102	RCUV1E104ZF	CAPACITOR 25 V 0.1	
C51	ECEA1HKKR47I	CAPACITOR 50 V 0.47		C103	RCUV1E153MD	CAPACITOR 25 V 0.015	
C52	RCUV1H102MD	CAPACITOR 50 V 0.001		C104	RCUV1H220KC	CAPACITOR 50 V 22	
C53	RCUV1E103MD	CAPACITOR 25 V 0.01		C105	RCUV1E153MD	CAPACITOR 25 V 0.015	
C54	ECEAOJK220I	CAPACITOR 6.3V 22		C106	RCUV1H220KC	CAPACITOR 50 V 22P	
C55	RCUV1H030CC	CAPACITOR 50 V 3P		C107	RCUV1H102MD	CAPACITOR 50 V 0.001	
C56	ECEA1HKKR47I	CAPACITOR 50 V 0.47		C108	RCUV1H102MD	CAPACITOR 50 V 0.001	
C57	ECEA1CK100I	CAPACITOR 16 V 10		C109	RCUV1H472MD	CAPACITOR 50 V 0.0047	
C58	RCUV1H050DC	CAPACITOR 50 V 5P		C110	ECEAOJU101E	CAPACITOR 6.3V 100	
C59	RCUV1H330KC	CAPACITOR 50 V 5P		C111	RCUV1E223MD	CAPACITOR 25 V 0.022	
C60	ECEA1CK100I	CAPACITOR 16 V 10		C112	ECEA1CK100I	CAPACITOR 16 V 10	
C61	ECEA1HK010I	CAPACITOR 50 V 1		C113	RCUV1E103MD	CAPACITOR 25 V 0.01	
C62	RCUV1H102MD	CAPACITOR 50 V 0.001		C115	ECUV1E104MD	CAPACITOR 25 V 0.1	
C63	RCUV1H103ZF	CAPACITOR 50 V 0.01		C116	RCUV1H390KC	CAPACITOR 50 V 39P	
C64	RCUV1H103ZF	CAPACITOR 50 V 0.01		C117	ECEAOJU101E	CAPACITOR 6.3V 100	
C65	RCUV1E103MD	CAPACITOR 25 V 0.01		C118	RCUV1E223MD	CAPACITOR 25 V 0.022	
C66	ECEA1HKKR33I	CAPACITOR 25 V 0.33		C119	ECEA1AKS220I	CAPACITOR 10 V 22	
C67	RCUV1H101K	CAPACITOR 50 V 100P		C121	RCUV1E104ZF	CAPACITOR 25 V 0.1	
C68	RCUV1E103MD	CAPACITOR 25 V 0.01		C122	RCUV1E223MD	CAPACITOR 25 V 0.022	
C69	RCUV1H103ZF	CAPACITOR 50 V 0.01		C123	ECEA1AU471E	CAPACITOR 10 V 470	
C70	RCUV1E223MD	CAPACITOR 25 V 0.022		C124	RCUV1H103ZF	CAPACITOR 50 V 0.01	
C71	ECEA1HK010I	CAPACITOR 50 V 1		C125	ECUV1E104MD	CAPACITOR 25 V 0.1	
C72	RCUV1H270JU	CAPACITOR 50 V 27P		C126	ECEA1HK010I	CAPACITOR 50 V 1	
C73	RCUV1H472MD	CAPACITOR 50 V 0.0047		C127	ECEA1EK4R7I	CAPACITOR 25 V 4.7	
C74	ECEAOGK470I	CAPACITOR 4 V 47		C128	RCUV1H103ZF	CAPACITOR 50 V 0.01	
C75	RCUV1H103ZF	CAPACITOR 50 V 0.01		C129	ECEA1AU221E	CAPACITOR 10 V 220	
C76	RCUV1E103MD	CAPACITOR 25 V 0.01		C130	RCUV1H681K	CAPACITOR 50 V 680P	
C77	RCUV1H103ZF	CAPACITOR 50 V 0.01		C131	ECUV1E104MD	CAPACITOR 25 V 0.1	
C78	RCUV1H220KC	CAPACITOR 50 V 22P		C132	ECUV1E333MD	CAPACITOR 25 V 0.033	
C79	ECEAOGK101I	CAPACITOR 4 V 100		C133	RCUV1H103ZF	CAPACITOR 50 V 0.01	
C80	RCUV1E103MD	CAPACITOR 25 V 0.01		C135	RCUV1H100DU	CAPACITOR 50 V 10P	
C81	ECEA1CK100I	CAPACITOR 16 V 10		C136	RCUV1H390KC	CAPACITOR 50 V 33P	

